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CONTENTS AND SUBJECT INDEX

The Mechanism of Physical Signs in Neoplastic and Other Diseases of the Lung, with Especial Reference to Atelectasis and Emphysema. Chevalier Jackson, M.D., Philadelphia 639
Discussed by Dr. Clerf.

Recent Contributions of Medical Men to Surgical Progress. William J. Mayo, M.D., Rochester, Minn. 644
Discussed by Drs. Billings and Ireland.

Sulphemoglobinemia. G. A. Harrop, Jr., M.D., and R. L. Waterfield, M.D., Baltimore.....647

Phrenic Nerve Operations in Pulmonary Tuberculosis: Results in Five Hundred Cases. E. J. O'Brien, M.D., Detroit.....650

Sensory Disturbances Following Operations on the Kidney: I, Post-Traumatic State of Twelfth Intercostal Nerve Simulating Ureteral Pain. C. B. Huggins, M.D., and P. C. Bucy, M.D., Chicago.652

Metastatic Melanoma of Both Eyes: Report of a Case. Frederick C. Cordes, M.D., and W. D. Horner, M.D., San Francisco.....655
Discussed by Drs. Asbury and Pfingst.

Asbestosis Bodies in Sputum and Lung. Kenneth M. Lynch, M.D., and W. Atmar Smith, M.D., Charleston, S. C. 659

CLINICAL NOTES, SUGGESTIONS AND NEW INSTRUMENTS

The Execution of Robert H. White by Hydrocyanic Acid Gas. Edward E. Hamer, M.D., Carson City, Nev. 661

A New Urine Collection Tube Holder. Edward William White, M.D., Chicago.....662

Strangulation of the Left Lobe of the Liver. L. D. Johnson, M.D., Chanute, Kan. 662

A New Mask that Protects Both Physician and Patient. Herbert V. Mellinger, M.D., Los Angeles..662

Benzoyl Peroxide in the Treatment of Poison Ivy Intoxication. P. D. Lamson, M.D., Nashville, Tenn.663

COUNCIL ON PHARMACY AND CHEMISTRY 663

EDITORIALS

Another Gas Hazard.....664
Susceptibility to Scarlet Fever..644
Labrador—A Lesson in Practical Nutrition 665
Variations in Blood Pressure....666

CURRENT COMMENT

Antisepsis During Labor.....667
Coccidioidal Granuloma.....667
The Hosts of Tularemia.....667

(Subject Index on next page)

ASSOCIATION NEWS 668

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Another SAUNDERS BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

The letters used to explain in which department the matter indexed appears are as follows: The Star (*) indicates an Original Article; "ab," abstract; "E," Editorial; "C," Correspondence; "Ml," Medicolegal; "ME," Medical Economics.

Abdomen, acute conditions....ab-701
wall necrosis after laparotomy....ab-702
Abortion, contagious vs. undulant fever....673
Acetanilid, sulphemoglobinemia from....*647
Acid, hydrocyanic gas, execution by....*661
Acidosis, metabolic reactions to....ab-694
Adenocarcinoma, magnesium chloride in..ab-698
Agranulocytosis, roentgenotherapy....ab-699
Air, injection into cranium....675
Albuminuria, fluctuations....ab-697
Alcohol as beverage and drug....672
Amentia Praecox....ab-699
Amyloidosis in chronic nephrosis....ab-697
Anemia, Pernicious, treatment....ab-700
earliest blood changes from liver treatment....ab-702
liver extract intramuscularly....ab-695
Aneurysm of interventricular septum....ab-690
Aorta, surgical occlusion....ab-700
Arsphenamine, granulocytic apparatus injury from....ab-701
Arteriography, examples of....ab-697
Arthritis, chronic....ab-691
Asbestosis bodies in sputum and lung....*659
Aspermia....683
Association News....668
Asthma....684; ab-696
Athletes, diseases of....ab-700
Auricular Fibrillation, heart block in....ab-694
Automobile radiators, antifreeze mixture, methanol....E-664
Axenfeld, Theodor, death of....676
Bacteriolysis....673
Bacteriophage....673
Bannister's Disease....684
Beit Fellowships....672
Benzoyl peroxide for rhus poisoning....*663
Bismuth subnitrate, oxytocic action....682
Blood, acetonemic vomiting....ab-697
circulating hormone in pancreas....676
count, Schilling, in acute infections...ab-689
malignant hypertension....ab-691
pressure, variations in....E-666
sulphemoglobinemia....*647
tests for paternity....C-681
transfusion, experiences with....ab-700
Bone lesions due to undulant fever....ab-701
long, sarcomas....ab-702
subchondral necrosis....ab-699
Book Notices....685
Books Received....Adv. page 34
Brain, changes in exsiccosis....ab-700
hyaline degeneration of capillaries....ab-699
Bronchus obstruction....*639
Bureau of Investigation....679
Cachexia, acholic....ab-700
Cancer, sedimentation test in....ab-702
crusade against, France....674
hereditary liability to....682
Capillaries, hyaline degeneration....ab-699
resistance test....ab-696
Carbon monoxide poisoning....ab-700
Cauda Equina, sarcoma metastases....ab-699
Cecum stasis, significance....ab-690
Cerebrospinal Fluid, protein in....ab-694
polypeptides in....ab-696
Child hygiene, week of....674
Chinese, susceptibility to scarlet fever....E-664
Cholera, pathogenesis of....674
Clark, Elmer E., passes worthless checks....671
Colon stasis vs. cecal stasis....ab-690
Congress of Psychopathology and Psychology.675
Correspondence....681
Corynebacterium, undescribed species...ab-692
Council on Pharmacy and Chemistry....663
Cranium trauma, diabetes insipidus from.ab-697
injection of air into, for epilepsy....675
Crime and psychiatry....675; C-681
detection, symposium on....668
Crippled children, state care, Virginia....670
Death penalty....*661; 672
Deaths....678
Diabetes Insipidus from cranial trauma..ab-697
Digitalis, Stokes-Adams syndrome from....ab-694
Disease carriers, law, Turkey....677
Echinococcosis, diagnostic difficulties....ab-695
Eczema from quinine....ab-691
Embolism of arteries of extremities:....ab-700
Emphysema....*639
Endocrine and renal systems....ab-701
Esophagus diverticulum, surgery for....ab-700
Execution by hydrocyanic acid gas....*661
death penalty....672
Exercise vs. basal heat production....ab-690
Exsiccosis, encephalitic changes in....ab-700
Eyes, metastatic melanoma of....*655
Fast days disapproved....677
Feces, acid in vs. infant's feeding....ab-689
Fees, physicians demand reasonable increase.674
Femur fractures, reduction by Muzii method....ab-697
Fetus, death, cause of....ab-697
Foreign Letters....672
Fürbringer, Paul, death....677
Gallbladder, nonsurgical drainage....683
Gas hazard: methanol....E-664
Giardia intestinalis in kidney pelvis....C-681
Ginger extract, neuritis from....ab-692
Goiter, exophthalmic....ab-694
exophthalmic, surgery for....ab-701
experimental production....ab-699
Gonorrhea, cutaneous vaccination in....ab-697
Granulocytic apparatus, toxic injury....ab-701
Granulomas, physical signs in....*642
coccidioidal....E-667
Hayfever....ab-696
Health law, public, new, Turkey....677
Heart block from digitalis....ab-694
dilatation of left auricle....ab-690
disease mortality, Oregon....669
in illuminating gas poisoning....ab-700
Hemicrania vs. acetonemic vomiting....ab-697
Hemorrhage, occult, in intestinal cancer.ab-702
Hernia, right sided diaphragmatic....ab-694
Herrmann, Dr., death....676
Hip Joint, congenital dislocation....ab-699
Hospital, bandits rob....669
Hydrocephalus, air injected into cranium...675
Hyperleukocytosis, eosinophilic....ab-696
Hypothyreosis, renal disease in....ab-701
Idiocy, Mongolian....684; ab-698
amaurotic....682
Immunity, rôle of lipoids in producing....674
Infants, feeding vs. acid in feces....ab-689
new-born, deaths, causes....ab-697
premature, feeding....ab-689
Infections, acute, Schilling blood count..ab-689
secondary, exogenous, with tuberculosis...675
Infectious Diseases, law on, Turkey....677
Influenza, etiology, discussed by Pfeiffer....674
International Congress of Microbiology....673
Intestines, cancer, occult hemorrhage....ab-702
gangrene, treatment....ab-701
occlusion, treatment....ab-696
Japanese, susceptibility to scarlet fever...E-664
Jaundice, acute catarrhal, gallbladder drainage....683
Kahn Reaction in children....ab-689
Kaiser Wilhelm-Gesellschaft, Rockefeller gives buildings to....676
Kidney, alveolar sarcoma....ab-698
chronic nephrosis with amyloidosis....ab-697
disorders, retina changes....ab-697
Giardia intestinalis in....C-681
lesions induced by viosterol....ab-690
lipoid nephrosis....ab-696
operations, sensory disorders after....*652
vs. endocrine systems....ab-701
Knapp, J., fined for illegal practice....669
Labor, antisepsis during....E-667
induction by drugs....682
Labrador—a lesson in practical nutrition..E-665
Larynx tuberculosis....ab-702
Lead poisoning in children....ab-695
Leiner, Professor, death....676
Leukemia, acute, clinical signs....ab-691
Lipacidosis, protective tropical, against scarlet fever....E-664
Liver cancer, primary....ab-691
cirrhosis, occlusion of veins with....ab-694
strangulation of left lobe....*662
Lung, amebic abscess....ab-696
asbestosis bodies in....*659
collapse....*639
diseases, physical signs in....*639
hemorrhage in talcum powder mixer....684
hemorrhage, what per cent tuberculous?...684
in illuminating gas poisoning....ab-700
Malpractice: aggravation of pre-existing injury: liability....Ml-688
Marriages....678
Mask, new....*662
Mastoidectomy....683
Mastoiditis, trauma as cause....Ml-688
Medical Education, Registration....685
Medicine, what is ahead in?....ab-693
Medicolegal....688
Meetings, Coming Meetings....688
Melanoma, metastatic, of eyes....*655
Meningitis, toxic....ab-696
Mercurochrome, antiseptic during labor...E-667
Metabolic reactions to acidosis....ab-694
Methanol, another gas hazard....E-664
Methylthionine Chloride, oxytocic actions...682
Milk, sugared condensed, vitamin C in..ab-698
Narcotics, conference on bureau of....671
Nephritis in tuberculosis....ab-696
New and Nonofficial Remedies....683
News....668
Nutrition in Labrador....E-665
Pancreas, new internal secretion of....676
Paralysis from ginger extract....ab-692
of abducens nerve....ab-701
Paratyphoid B in sewage....ab-695
Paternity, blood tests for....C-681
Peham, Professor, death....676
Penis, lymphatic swelling on....684
Periosteum grafts....ab-697
Physicians and the health movement....ab-693
contributions to surgical progress....*644
Pneumonoconiosis in talcium powder mixer..784
Poison Ivy poisoning, benzoyl peroxide for.*663
Pollen extracts, inhalations....ab-696
Polypeptidorrhachia....ab-696
Poynton, Frederick J., awarded Dawson Williams prize....671
Prostate, chronic engorgement....684
Psychiatry in relation to crime....675; C-681
Queries and Minor Notes....682
Quincke's Disease?....684
Quinine, hypersensitiveness to....ab-691
sulphate, oxytocic action....682
Rabies, law on, Turkey....677
Radio Program....668
Radium centers in Great Britain....671
deposits, discovered in Russia....674
gift of, to celebrate Döderlein's birthday..677
Redlich, E., death....676
Retina changes in renal disorders....ab-697
Ringworm, thallium acetate epilation in..ab-698
Rockefeller gives buildings to Kaiser Wilhelm-Gesellschaft....676
Rongetti, Amante, sentenced to prison....668
Rubella, atypical form....ab-698
Runners, avulsion of epiphysis of spine iliac....ab-699
Salt free diet, substitute for salt in....684
Sarcoma of long bones....ab-702
carcinomatoid, of kidney....ab-698
Sausage, green rings in....682
Scarlet Fever....673
susceptibility to....E-664
Sewage, typhoid-paratyphoid bacilli in...ab-695
Shaving lotions, eczema from....ab-691
Skin melanoma metastases to eyes....*655
Society Proceedings....688
Spina iliaca, avulsion of epiphysis....ab-699
Spirochetosis....674
Sputum, asbestosis bodies in....*659
State Board Examinations....685
Sterility, roentgen-ray....683
Stillbirths....ab-697
Stomach, congenital diverticula....ab-691
Sulpharsphenamine in syphilis....ab-693
Surgery progress, contributions to....*644
Sympathicoblastoma of skin of thigh....ab-689
Syphilis, sulpharsphenamine in....ab-693
Testicle, bilateral tumors....ab-693
Therapeutics, alcohol in....672
Thigh, sympathicoblastoma of skin....ab-689
Thumb, snapping, treatment....ab-701
Tissue, cultivation of....674
Tomatoes, home-canned, vitamin F in....682
Tonics and Sedatives....Adv. page 28
Trauma, effect on organic function....ab-700
Tuberculin injected into renal arteries..ab-689
Tuberculosis in childhood....ab-694
exogenous secondary infections with....675
immunization, B C G, Lübeck disaster....676
lesions, viosterol calcifies....ab-695
nephritis in....ab-696
pulmonary, phrenic nerve operations in..*650
Tularemia, hosts of....E-667
Undulant Fever, bone lesion from....ab-701
contagious abortion and....673
Ureter pain, posttraumatic state of intercostal nerve....*652
Urine, antoxyproteic acid....ab-699
collection tube holder....*662
lipoids in....ab-692
Uterus, cervical cancer, radiotherapy...ab-690
Vanderlaan, John, honored....668
Varicose Veins, injection treatment....ab-695
Venereal Disease, incidence....682
Viosterol calcifies tuberculous lesions....ab-695
renal lesions induced by....ab-690
Viruses, neurotropic, filtrable elements....673
Vital Statistics, deaths in Oregon....669
Vitamin C in sugared condensed milk...ab-698
Vomiting, acetonemic....ab-697
Wassermann Test on umbilical cord blood..683
White Robert H., execution of....*661
Yellow Fever research....672

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THE MECHANISM OF PHYSICAL SIGNS IN NEOPLASTIC AND OTHER DISEASES OF THE LUNG

WITH ESPECIAL REFERENCE TO ATELECTASIS AND EMPHYSEMA *

CHEVALIER JACKSON, M.D.
PHILADELPHIA

In eliciting physical signs, it is perhaps better to record simply what is seen, felt and heard with no thought of the conditions producing them. When it comes to the interpretation of the signs, however, the mechanism of their production is of fundamental importance.

Many years ago bronchoscopic studies demonstrated the mechanism of the physical signs of foreign bodies in the bronchi, and the correlated studies demonstrated that the understanding of this mechanism is essential for the proper interpretation of the physical signs.[1] Moreover, it soon developed that a full comprehension of the mechanism of the signs greatly increased their diagnostic value as to the presence of a foreign body and especially as to its exact location. In hundreds of cases, bronchoscopic observation of the foreign body has proved the accuracy of the localization of the intruder as indicated by the interpretation of the physical signs based on the bronchoscopically discovered mechanism of their production. The studies were greatly facilitated by the fact that the removal of the foreign body and the consequent change in the physical signs rendered possible a checking and restudy of the previous interpretations. The many valuable and extremely practical contributions of the objective bronchoscopic observations to the proper interpretation of physical signs in foreign body cases led to a similar study in cases of pulmonary disease of other than foreign body origin. With the knowledge gained from this study of the mechanism of the physical signs in foreign body cases, the study of the mechanism of the signs in disease was much simplified. The first step in this direction was the bronchoscopic discovery that secretions, especially when viscid or dried, may produce the same physical signs as foreign substances and should, under these circumstances, be classed as endogenous foreign bodies.[2] It was also observed that mucosal swelling, granulations, granulomas and tumors, benign and malignant, at times produce the same phenomena and the same physical signs as foreign bodies. During twenty years, the physical signs elicited by the internist immediately before bronchoscopy for disease have been recorded for comparison with the objective bronchoscopic observations. The results have been extremely interesting. The mass of material collected, covering nearly 5,000 cases, is huge; space limits prevent presentation here of more than a few of the data bearing on only one phase of the subject. Within even these narrow limits, in order to avoid getting too far afield, it is necessary to omit all consideration of the niceties of diagnosis by physical signs.

BRONCHIAL OBSTRUCTION

Obstruction of a bronchus is one of the fundamental factors in the etiology of pulmonary disease;[3] it is of vital importance to the patient; it is one of the fundamental things in the production of physical signs. Therefore, it logically deserves first place in the analysis of the objective bronchoscopic observations in comparison with the physical signs elicited in the same patient at practically the same time. Of course, abnormal physical signs may be produced by pathologic changes other than bronchial obstruction; but it is abundantly proved by bronchoscopic observation that, though the obstruction may vary in degree from the slight obstruction of a few drops of secretion to total occlusion by secretions or organic disease, clear, unobstructed bronchial tubes produce none of the signs that are deemed abnormal (fig. 1).

Types of Bronchial Obstruction.—Bronchoscopic studies in foreign body cases revealed the fact that there are three types of bronchial obstruction.[4] These three types are represented in mechanics by (1) a stop valve; (2) a check valve, and (3) a by-pass valve.

Stop Valve Obstruction.—In this type of obstruction the bronchus is corked, and no air can get either in or out.[5] The residual air confined below is absorbed and in a few hours atelectasis becomes demonstrable by the impairment of the percussion note concurrent with the absence or distance of the breath sounds. The degree of the atelectasis will be in proportion to the duration of the complete stage of the obstruction; the rapidity of its onset will depend on whether or not it was preceded by a pumping out of air by check valve obstruction to inflow. Atelectasis is likely to be mistaken for pneumonia, drowned lung or empyema

* From the Department of Bronchoscopy and Esophagoscopy, Temple University.

* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

1. Jackson, Chevalier: The Mechanism of Physical Signs, with Especial Reference to Foreign Bodies in the Bronchi, Am. J. Med. Sci. **165**: 313 (March) 1923.

2. Jackson, Chevalier: Peroral Endoscopy and Laryngeal Surgery, St. Louis, Laryngoscope, 1915, p. 1014; Endoscopie et chirurgie du larynx, Paris, Gaston Doin, 1923.

3. Jackson, Chevalier: Bronchoscopy: Past, Present and Future, New England J. Med. **109**: 759-763 (Oct.) 1929.

4. Jackson, Chevalier; and Lee, W. E.: Acute Massive Collapse of the Lung, Ann. Surg. **82**: 364 (Sept.) 1925; Tr. Am. S. A. **43**: 723, 1925; Jackson, Chevalier (footnote 1); Bronchoscopy and Esophagoscopy, ed. 2, Philadelphia, W. B. Saunders Company, 1927.

5. Jackson (footnote 1); Indications, technique et résultats de la bronchoscopie, Presses universitaires de France, 1924, Vernet series; Bronchoscopy and Esophagoscopy.

because of the misinterpretation of the percussion note and the inattention to the breath sounds.[2] This mistake has often been made in patients afterward referred to the Bronchoscopic Clinic. In many of the cases, negative needling had been done;[2] in other cases there had been a thoracotomy for a supposed empyema. After the lapse of a variable period of time, drowned lung succeeds to the atelectasis because there are always at least a few organisms present in the bronchi. So long as ventilation and drainage are unimpaired, the defensive powers of the lung destroy these bacteria or limit their activity; but in the absence of ventilation and

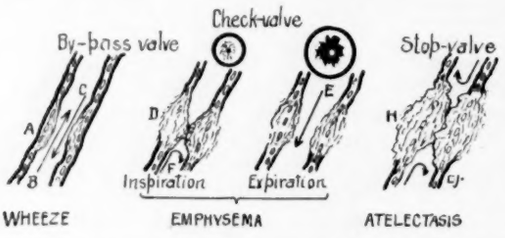


Fig. 1.—Schematic illustration of the three valvular types of bronchial obstruction by an annular growth, in a man aged 62. First a wheeze, then an emphysema, then an atelectasis resulted. At *A*, air passes both in and out producing one of the most important signs of bronchial obstruction, a wheeze heard at the open mouth. At *D*, a later stage in the same patient is represented. The growth had increased to the point at which the lumen closed during expiration, preventing escape of air as shown by the bent dart *F*. On inspiration the enlargement of the invaded bronchial tube was sufficient to permit air to enter as shown by the dart *E*. The corresponding bronchoscopic views are shown in the circles. This is a check valve action, but it is an expansile, not a ball valve, type of check valve. At *H* is shown a still later stage when the lumen was filled so that no air could enter on inspiration. The air in the tributary pulmonary parenchyma was absorbed and atelectasis slowly developed.

drainage incidental to stop valve obstruction, the defensive powers of the lung are so diminished that suppuration quickly follows the unrestrained activity of pyogenic organisms.[3]

By-Pass Valve Obstruction.—In this type of obstruction, the lumen is simply narrowed; air can pass both in and out but in diminished amount. If the degree of obstruction is relatively slight there may be little change in the physical signs at the chest wall; but we have observed at the Bronchoscopic Clinic that the obstruction does not need to diminish the lumen very much until one important sign can be found if listened for with patience. This sign is the asthmatoid wheeze[6] heard at the open mouth of the patient. The importance of this sign is not generally realized. If the examiner's ear is repeatedly kept for a few minutes close to the open mouth of the patient during deep breathing, a wheezing sound will be heard in nearly all cases of bronchial obstruction of types 2 and 3. This sign, the asthmatoid wheeze, unlike the true asthmatic wheeze, is rarely audible at the chest wall.[6]

Check Valve Obstruction.—For many years it has been known that a tumor could compress or involve a bronchus in such a way as to occlude it partially or completely; but it is only since the advent of bronchoscopic observations[7] that it has been demonstrated that a tumor may cause check valve obstruction by means of which a flow of air in only one direction may cause either an obstructive atelectasis or an obstructive emphysema, according to the direction in which the check valve operates; and, that, furthermore, the emphysema and the atelectasis may follow each other in quick succession according to the action of the valve.[7]

A check valve in mechanics is one that permits a flow in one direction only; any tendency to flow in the other direction is immediately checked. Check valves are of two types, the ball valve and the flapping valve (figs. 2 and 3). They are fundamental to pumps and are indispensable in reciprocal pumps. A perfect understanding of the action of the check valve in a pump will elucidate the subject of atelectasis and emphysema due to a check valve mechanism in the tributary bronchus. It is well known in mechanics that a check valve can be set to work either way; that is, by the setting of the check valve a reciprocating pump will either fill or empty a certain reservoir. A bellows, by reversal of the flapping check valve, can be made to fill or to empty itself. The human thorax in its respiratory expansion and contraction simulates a bellows.

Applying these mechanical principles to the lungs, the reciprocating expansion and contraction of the thoracic walls may fill or empty a given area of lung according to whether the check valve action in the bronchus checks against inflow or against outflow of air. If the check valve favors outflow and checks inflow, there will be rapid emptying of air and consequent atelectasis of the tributary area of lung. Absorption of retained air assists in producing the atelectasis and may alone produce it; but the action is then slower than when the check not only prevents both escape and ingress but creates an actual out-pumping of air. Check valve action in a bronchus may be of the ball valve or the flapper valve type.

Resetting of the Check Valve.—As explained in a foregoing paragraph, the direction of the flow in reciprocating pumps can be reversed by reversing the check valves. A similar reversal has often been seen at the Bronchoscopic Clinic in cases of foreign body, tumor and various other diseases. The first case observed was reported fourteen years ago,[7] and is illustrated schematically in figure 4. Resetting of the check valve action in the human tracheobronchial tree, from (*a*) shifting of a foreign body, (*b*) outgrowth of masses of inflammatory or neoplastic tissues and (*c*) changes in the tissues that form the valve seat, changes in the character of the secretions or in the location of particular masses of secretion.

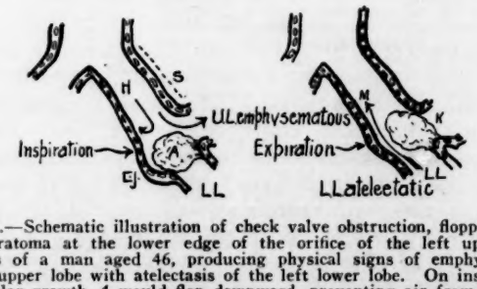


Fig. 2.—Schematic illustration of check valve obstruction, flopping type, by a teratoma at the lower edge of the orifice of the left upper lobe bronchus of a man aged 46, producing physical signs of emphysema of the left upper lobe with atelectasis of the left lower lobe. On inspiration, the nodular growth *A* would flop downward, preventing air from entering the lower lobe, *LL;* but by the same movement it opened the way for admission of air into the upper lobe, *UL*. On expiration, the flopping upward of the growth closed the upper lobe bronchial orifice, trapping the air, *K*, and producing emphysema of the upper lobe. At the same time atelectasis in the lower lobe was hastened by the pumping out of air (*M*), which could not get in again on inspiration (*H*). In this case, in addition to the flopping check valve action of the tumor (*A*) there was an expansile check valve action of the bronchial wall indicated by the dotted line *S;* this, on inspiratory enlargement, increased the space for inflow of air; recession of the wall promptly at the beginning of the expiratory phase assisted the tumor in trapping the air producing the obstructive emphysema.

Obstructive Atelectasis and Obstructive Emphysema.—It is, of course, generally accepted that no one sign or group of signs can be regarded as diagnostic of any particular disease but rather of conditions that may be due to any one or more of a number of different

6. Jackson, Chevalier: A New Diagnostic Sign of Foreign Body in Trachea and Bronchi, the "Asthmatoid Wheeze," Am. J. Med. Sci. **156:** 625 (Nov.) 1918.

7. Jackson (footnote 2); Endothelioma of the Right Bronchus Removed by Peroral Bronchoscopy, Am. J. Med. Sci. **152:** 371 (March) 1917.

maladies. There are, however, two groupings of signs that are so often indicative of foreign body that this diagnostic possibility requires primary consideration in all such cases.[1] These groups are:

1. Concurrence of absent or distant breath sounds with unimpaired or hyperresonant percussion note, denoting obstructive emphysema. There is air in the lung but it cannot be heard to pass in or out.

2. Distant or absent breath sounds with dull or impaired percussion note. There is little air in the lung and none can be heard passing in or out. Obstructive atelectasis is to be suspected.

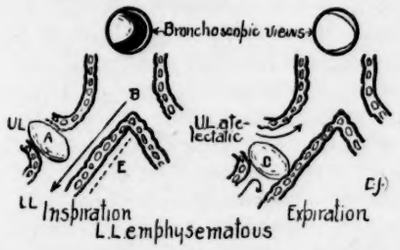


Fig. 3.—Mechanism of emphysema and atelectasis in a child, aged 4 years. Two fundamentally different mechanisms are involved. The prune pit, *A*, is acting as a ball check valve producing atelectasis of the right upper-lobe bronchus (*UL*) and at the same time acting as an expanding and contracting check valve in producing emphysema of the middle and the lower lobe (*LL*). On inspiration the prune pit (*A*) moves snugly into the orifice of the right upper lobe, preventing ingress of air; at the same time the same sidewise movement has allowed room for the ingress of air into the lower and middle lobes, as shown by the dart, *B*. On expiration, however, the prune pit is dislodged at *C* sufficiently to permit air to be pumped out of the upper lobe, as shown by the dart, *D*, producing atelectasis of the upper lobe. The valvular action was evidently assisted by the inspiratory enlargement of the stem bronchus indicated by the dotted line (*E*), thus adding the expansile check valve action to the ball valve mechanism. The prune stone had previously been in the right lower lobe bronchus, where it had created an atelectasis of the lower lobe. This was converted into an emphysema in an hour or two when the valvular mechanism illustrated here was set up by shifting of the prune pit from the lower lobe bronchus to the new position in the orifice of the upper lobe bronchus (*UL*). Air was thus pumped into the previously atelectatic lobe. On the roentgen-ray signs of the shift in the location of the atelectasis and emphysema Willis F. Manges located the prune pit in the orifice of the right upper-lobe bronchus, and that is where I found it moving to and fro at each inspiration and expiration.

To both of these groups limitation of expansion is usually added, but it is omitted here in both groups in order to emphasize and contrast the fundamentals.

The concurrence of distant or absent breath sounds with a hyperresonant or unimpaired percussion note justifies a tentative diagnosis of check valve obstruction of the tributary bronchus, and in children a foreign body is the first diagnostic possibility to be considered. In adults, check valve obstruction may be due to a foreign body, but more often it is due to abnormal secretions or to tissue changes, inflammatory or neoplastic.

The concurrence of distant or absent breath sounds with an impaired percussion note may be associated with a variety of disease conditions, but the records of the Bronchoscopic Clinic show that the most often overlooked conditions are (*a*) stop valve or reverse check valve obstructions producing atelectasis, and (*b*) drowned lung. These records indicate that, in all cases of atelectasis in children, a foreign body should be thought of as the first diagnostic possibility to be excluded. In adults, neoplastic diseases have been the most frequent. In some cases there has been a sequence of these conditions; namely, (*a*) check valve, (*b*) reverse check valve, (*c*) stop valve and (*d*) drowned lung. As the latter condition is soon followed by abscess, it is obviously important to determine the conditions in the stages of valvelike obstruction when the condition is so often easily curable. This determination can be made by the simple expedient of inspecting the obstructed bronchus with the bronchoscope, and this is usually the only way in which such a determination can be made.

Return of Function After Atelectasis.—One of the clinically important points observed in cases of obstructive atelectasis is that the removal of the obstruction, however complete it may be, does not immediately restore function to the atelectatic area, notwithstanding the fact that the previously absent auscultatory signs immediately return. In cases in which a foreign body dislodged from its tightly corking position in one main bronchus was inspirated into the other lung, cyanosis of mucosal and skin surfaces immediately appeared; and only prompt bronchoscopic removal of the obstructive foreign body from its new position prevented the impending asphyxia that was due to both lungs being out of function, one by the new corking and the other by the still expanded though uncorked lung. In some cases, râles in great variety were audible as soon as the tributary bronchus was uncorked; they would mislead one into the inference that the lung is functioning.[7]

CONDITIONS PRODUCING VALVULAR OBSTRUCTION

Bronchoscopic observations have revealed the fact that check valve obstruction may be produced by various mechanisms, chief of which are (1) foreign bodies; (2) benign growths; (3) malignant growths; (4) adenopathy; (5) anomaly; (6) inflammatory mucosal swelling; (7) granulations and granulomas; (8) secretions; (9) blood clots.

Foreign Bodies.—The mechanism of the physical signs of foreign bodies was presented a number of years ago.[1] It is interesting to note that all of the fundamentals formulated at that time have been abundantly corroborated by daily use in the Bronchoscopic Clinic. There are two kinds of valvular mechanism in these cases: (1) movement of the foreign body itself; (2) changes in the form of the valve seat, usually inspiratory movements of expansion or elongations of the bronchial wall. We discovered that endogenous substances, such as granulations, tumors and swollen or displaced normal tissues, can produce physical signs in the same way as foreign bodies. The differential diagnosis as between a nonopaque foreign body and an endogenous substance acting as such (secretions, pus, granulations or tumors) can be quickly, easily and

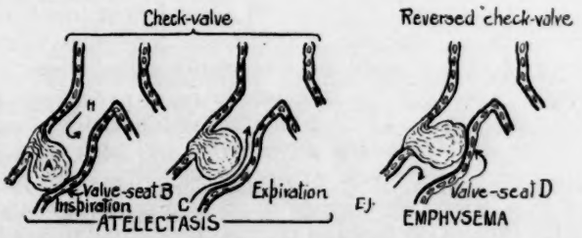


Fig. 4.—Schematic illustration of check valve action of the flapping type of a pedunculated endobronchial nodular malignant tumor in a man, aged 35. The globular tumor, *A*, was free to move up and down in a bronchial dilatation that it had made for itself. At the very beginning of inspiration it would suddenly go downward and occlude the lower end of the dilatation (valve seat *B*), preventing ingress of air (bent dart *H*); on expiration it would rise enough to let air escape as shown by dart *C*. The effect of this was to pump the air out of the lower lobe, producing an atlectasis. This action was seen bronchoscopically. Inferentially it seemed probable that imperfect seating of the flapper occasionally occurred, air got below it, and a reverse check valve action (*D*) produced an emphysema. This would explain the fluoroscopic observation by Dr. George C. Johnston that the opacity occasionally cleared and reappeared, and the observation by Dr. John W. Boyce that physical signs indicated occasionally the entrance of air into the atelectatic right lower lobe. This reversing of the check valve was felt by the patient, who said that his breath was shut off sometimes on breathing in, and at other times on breathing out. The upper lobe bronchial orifice above the tumor is omitted for clearness.

safely made with the bronchoscope, and this is the only means by which it can be made.

New Growths.—Prior to the advent of the bronchoscope, endobronchial benign growths were discovered only at autopsy. As they were seldom fatal, clinicians regarded them as so rare as to be mere curiosities not worthy of consideration in daily work. The growths produced symptoms and physical signs the significance of which was overlooked. The bronchoscope has demonstrated that, though far from being common, they are to be considered as diagnostic possibilities in every

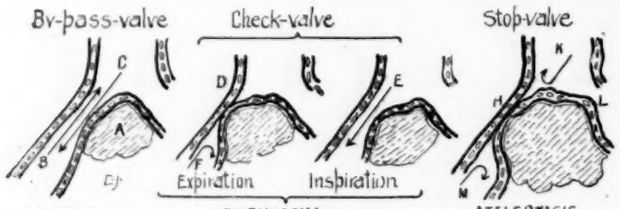


Fig. 5.—Schematic illustration of the three types of bronchial obstruction produced by a peribronchial mass, in this case a mass of tuberculous glands at the bifurcation of the trachea in a baby, aged 20 months. At *A* there is a compression stenosis causing a wheeze heard at the open mouth, air passing in and out. At *D* the compressive mass is large enough to obstruct on expiration but not large enough to prevent entrance of air on inspiration; this check valvular mechanism caused an emphysema of the right lung. At *L* is shown a late stage. After causing atelectasis of the right lung by obliteration of the lumen of the right bronchus (*H*), the growth caused a wheeze by encroachment on the lumen of the left bronchus (*L*). Later still, emphysema resulted from check valve obstruction at the same location (*L*), and later still, stop valve obstruction at the same place; the atelectasis, thus becoming bilateral, resulted in asphyxia.

case of bronchial obstruction. At first thought, one would infer that since bronchial obstruction is purely mechanical, the physical signs of obstruction would be the same regardless of malignancy or benignancy of the process, and such was the opinion until unmistakable, objective, clinical evidence was afforded by the bronchoscope. The essential difference apparently depends on (1) the often pedunculated shape; (2) the absence of infiltration; and (3) the much longer duration as compared with malignant neoplasms. The absence of infiltration may prevent narrowing of the bronchial lumen or may permit its widening to accommodate the bulk of the growth (figs. 2 and 4) and even to permit by-passage of air; the uninfiltrated base favors the loosely flopping, more or less pedunculated form of tumor. The action of the sessile form of growth is shown in figure 1; that of the pedunculated form in figure 2. A flopping growth that has been causing emphysema by a check valve obstruction may become fast in adhesive secretion or in swollen mucosa, changing the type of obstruction from a check valve to a stop valve; then atelectasis will follow an emphysema. A flopping endotracheal goiter caused alternating atelectasis in the right and the left lung. Compressive substernal goiters caused the emphysema-atelectasis sequence shown in figure 5.

Malignant Growths.—In their early stages, malignant growths have been noted in the case records at the clinic to have been the cause of obstructive emphysema due to check valve obstruction. In patients who remained under observation, the emphysema was sooner or later succeeded by obstructive atelectasis. For a time there was in some cases an alternating emphysema and atelectasis indicating a resetting of the check valve with pumping out or in of the air. In patients coming in late in the disease, the stop valve type of obstruction with consequent atelectasis was more commonly observed. The mechanism of production of the three types of bronchial obstruction in malignant disease of the bronchi in some cases was the same as that of benign growths; a flopping nodule plus a valve seat (fig. 2). More often, however, it was of the expansile type illustrated in figure 1. The mechanism of peribronchial growths I found to be that shown in figure 5. The most frequent of these was lymphosarcoma.

Adenopathy.—Glandular compressive stenoses, associated with check valve obstruction producing emphysema, has been observed in patients afflicted with malignant and tuberculous conditions. A typical case is illustrated in figure 5. In some instances the character of the lymphadenopathy could not be determined. Hodgkin's disease was the most common.

Anomaly.—Both stop valve and check valve types of bronchial obstruction have been found bronchoscopically as congenital conditions producing emphysema and atelectasis. In some instances the conditions, being unilateral, were symptomless, though physical signs of typical character were elicted. In all cases of congenital atelectasis or emphysema that do not disappear after say five or six months, a diagnostic bronchoscopy is indicated; sooner, of course, if the symptoms are marked.

Inflammatory Mucosal Swelling.—Of these cases we have had hundreds. In fact, it is exceedingly rare to find a very young child with a vegetal foreign body who does not have obstructive emphysema or obstructive atelectasis as the result of the good valve seat afforded by the swollen mucosa. They are our best diagnostic signs. The rounded shape of the bean favors stop valve obstruction and atelectasis; the angular form of the usual fragment of peanut kernel favors check valve obstruction and emphysema. For a day or two after removal of the vegetal foreign body the mucosal swelling may alone act as an expansile check valve similar in mechanism to that shown in figure 1, and thus delay the disappearance of the obstructive emphysema.

Granulations and Granulomas.—In the production of physical signs, these differ from benign growths only in that they are preceded by inflammation and its

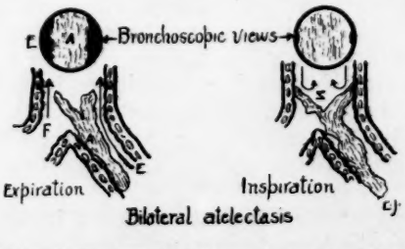


Fig. 6.—Schematic illustration of the mechanism by which cast off diphtheritic membrane produced bilateral atelectasis in a child, aged 3 years, as seen bronchoscopically during artificial respiration. On "expiration," spaces for air opened at *E, F.* At the beginning of "inspiration" the membranes flapped outward, checking inflow as shown by the bent darts *Z.* The mechanism had evidently produced a fatal atelectasis; an intense cyanosis of dermal and mucosal surfaces indicated that the heart had been working after respiration had ceased, and autopsy showed both lungs completely collapsed. The membrane was found in the expiratory position shown here. In the circles the corresponding bronchoscopic appearances are schematically presented.

products, whereas in cases of benign growths the inflammation does not appear until the growth produces obstruction. The following case is illustrative of by-pass valve obstruction noted in many cases of benign growths, as well as in cases of granulations and granulomas:

A woman, aged 39, had been treated for asthma on the basis of reaction to sensitization until dyspnea became so severe that asphyxia impended. Wheezing could be heard at a distance of

10 feet from the open mouth. Physical examination by Elmer H. Funk elicited, among other signs, limited expansion, distant breath sounds and an impaired percussion note all over both lungs, sufficient in degree to warrant an inference of impending partial atelectasis of both lungs. Bronchoscopy by Edmond Ancoin revealed almost complete obstruction of both main bronchial orifices by fungating masses having the appearance of papillomas. Bronchioscopic removal of these masses caused the wheeze and dyspnea to disappear. A slight recurrence of these symptoms and the previously noted physical signs was found to be due to cicatricial narrowing of the bronchial orifices. Dilation of this stenosis again caused disappearance of signs and symptoms. This case illustrates (*a*) the diagnostic value of the wheeze heard at the open mouth, (*b*) the production of atelectasis with extreme air hunger by the check valve action of a growth in pumping air out of the lung, and (*c*) the clinical value of bronchoscopy for diagnosis and treatment.

Secretions.—These alone have caused each of the three types of bronchial obstruction in many cases observed at the Bronchoscopic Clinic. In an even greater number, the secretions played a supplementary part in the mechanism. Secretions, when sufficiently viscid or hardened into crusts or membranes, or coagulated by excess of fibrin,[3] have in many cases completely corked a bronchus of normal sized lumen, producing a stop valve obstruction. In other cases they have produced a check valve obstruction with resultant emphysema, or, by resetting of the check valve mechanism, atelectasis. In many other cases, however, it was the pathologically narrowed lumen that enabled the secretions to form an efficient check valve mechanism. Changes in the character of the secretion favoring the setting up of a check valve or stop valve mechanism have been noted in our cases as due to the following causes: (*a*) increase of fibrin due to excess of fibrinogen secondary to inflammation or passive congestion;[3] (*b*) absence of the cough reflex and resultant stagnation; (*c*) internal administration of morphine and atropine; (*d*) character of the bacterial infection. Walter Estell Lee has been investigating sensitization as a cause of increased viscosity of bronchial secretions. Possibly this may have been an important factor in some of the cases. Dr. Lee has called my attention to the experimental work of C. M. Van Allen showing that the blocking of a bronchus by secretions does not result in atelectasis from absorption of air; a check valve action being required. Lee, Leopold, Tucker, Clerf, Hearn and Ravdin have made bronchoscopic studies in postoperative atelectasis.

An interesting fact many times observed bronchoscopically has been the total absence of râles, dry or moist, in patients with considerable quantities of purulent secretion in the bronchi. A record of these observations will be published later.

Asthma.—In many cases of asthma the air hunger seemed to be due to the pumping out of air from both lungs. Bronchoscopic removal of the secretions that were acting as check valves almost always cured the air hunger.

Diphtheria.—One of the diseases most commonly associated with the check valve mechanism is diphtheria. The valvular obstruction when in the larynx or cervical trachea is promptly indicated by inspiratory indrawing at the suprasternal notch; and if the attendant is aware of the significance of this pathognomonic sign, tracheotomy will save the child's life. When, however, the check valve obstruction is below the suprasternal notch, it is usually overlooked. If unilateral, the child usually recovers; if bilateral, he dies and the death is attributed to toxic myocardial causes. Most of the deaths in tracheobronchial diphtheria are due to unrecognized respiratory obstruction, myocardial factors being present or not. In the early stages of tracheobronchial diphtheria, death is most often due to stop valve obstruction, the trachea or both main bronchi being occluded completely by a soft pulpy exudate resembling edematous nasal polypi in physical character.[2] In the later stages a flapping valve formed of cast-off membrane may produce emphysema if the check is against outflow or atelectasis if the check is against inflow. When either emphysema or atelectasis is unilateral, recovery usually follows; when emphysema is bilateral, the chances for recovery are good; when atelectasis is bilateral, death is certain unless the condition is recognized and bronchoscopic clearing of the obstruction is promptly resorted to. In some cases the air is pumped out of the lungs so rapidly that death simulates cardiac failure (fig. 6). It seems probable that many of the cases of so-called black diphtheria of long ago were of this type. I have never yet seen a death from diphtheria in which the breath sounds had not disappeared from both bases an unusually long time before the heart stopped.

Blood Clots.—That blood clots can produce stop valve obstruction is shown by a number of bronchoscopic observations. Narrowing of the bronchial lumen was present in nearly all whether the basic abnormality was cancer, tuberculosis, syphilis, spirochetosis, a foreign body or an inflammatory condition. Relief of the obstruction by bronchoscopic removal of the clot seemed to justify the opinion that the obstruction was due to the clot. A number of cases of the check valve type of obstruction due to blood clots were seen. The primary conditions were new growth, tuberculosis, foreign bodies, spirochetosis, pneumonia and inflammatory diseases.

CONCLUSIONS

1. Respiratory air passing through a bronchial tube lined with its thin mucosa integral with the annular perichondrium produces no physical sign that is deemed abnormal.

2. For the production of abnormal physical signs, one or more of four conditions must be present: (*a*) narrowing or enlargement of the lumen; (*b*) swollen mucosa; (*c*) projecting abnormal tissue; (*d*) foreign body, or, (*e*) secretions acting as such (endogenous foreign body).

3. Bronchoscopic observations have determined the fact that there are three different types of bronchial obstruction, comparable in action to the three types of valves in mechanics. In the bronchi there may be: (1) stop valve obstruction, in which no air passes in or out of the tributary area of lung, resulting slowly in atelectasis from absorption of the contained air, and later in drowned lung; (2) by-pass valve obstruction, in which a diminished amount of air passes both in and out; and (3) check valve obstruction, in which air is permitted to pass one way only, either in or out, rapidly resulting in emphysema or atelectasis according to the setting of the valvular mechanism. Check valves may be formed by inspiratory enlargement and expiratory diminution of the lumen of infiltrated or inflammatory bronchial walls as well as by mobile tissues or secretions that form ball valve or flapping valve mechanisms.

4. Alternate expansion and contraction of the thorax in the respiratory cycle may be considered as a reciprocating pump. In mechanics a reciprocating pump

may be made to pump air in or out of a reservoir according to which way the check valve is set. In the check valve type of bronchial obstruction, air may be pumped in or out of the tributary area of lung, resulting in either emphysema or atelectasis, according to the setting of the check valve mechanism.

5. One type of obstruction may follow another, and in some cases two types may alternate.

6. Full comprehension of the mechanism of each of the three types of bronchial obstruction is necessary for the proper interpretation of the physical signs; and, properly interpreted, the signs in the respective conditions become of the utmost diagnostic importance.

7. Bronchial obstruction is so often associated with a normal or hyperresonant percussion note that the utmost care in accurately determining the character of the breath sounds is necessary for exclusion of the minor degrees of the check valve type of bronchial obstruction.

8. Atelectasis in children is so often due to bronchoscopically curable valvular obstruction that the diagnosis of other types of atelectasis should not be made until after diagnostic bronchoscopy has excluded bronchial obstruction.

235 South Fifteenth Street.

ABSTRACT OF DISCUSSION

DR. LOUIS H. CLERF, Philadelphia: Unless one appreciates the mechanical principles underlying the production of bronchial obstruction, obstructive emphysema and obstructive atelectasis, it is difficult, if not impossible, to interpret physical signs correctly. Comparing the changes occurring in the tracheobronchial tree to those that occur in pumps enables one to appreciate more fully the signs and their interpretation. I believe it would be well to teach that to the medical student. The wheeze and asthma have been closely associated since ancient times. As Dr. Jackson pointed out, any condition that produces partial bronchial obstruction will produce a wheeze. During a paroxysm of asthma that condition exists. The question of diagnosis usually has to do with ascertaining whether or not there is bronchial obstruction. Etiology should be a secondary consideration until that has been established. I may say that it is very difficult at times to determine the etiology by the usual methods of examination. In our experience, the best way to ascertain the cause of bronchial obstruction is to pass a bronchoscope and look.

What an Opportunity You Have.—Here, for instance, is a poor fellow who has just been jolted to the hospital in an ambulance. A string of questions about himself and his family has been fired at him, his valuables and even his clothes have been taken away from him, and he is wheeled into the ward on a truck, miserable, scared, defenseless, and, in his nakedness, unable to run away. He is lifted into a bed, becomes conscious of the fact that he is the center of interest in the ward, wishes that he had stayed at home among friends, and, just as he is beginning to take stock of his surroundings, finds that a thermometer is being stuck under his tongue. It is all strange and new, and he wonders what is going to happen next. The next thing that does happen is that a man in a long white coat sits down by his bedside, and starts to talk to him. Now it happens that according to our system of clinical instruction that man is usually a medical student. Do you see what an opportunity you have? The foundation of your whole relation with that patient is laid in those first few minutes of contact, just as happens in private practice. Here is a worried, lonely, suffering man, and if you begin by approaching him with sympathy, tact, and consideration, you get his confidence and he becomes your patient. Interns and visiting physicians may come and go, and the hierarchy gives them a precedence; but if you make the most of your opportunities he will regard you as his personal physician, and all the rest as mere consultants.—Peabody, F. W.: Doctor and Patient, New York, Macmillan Company, 1930.

RECENT CONTRIBUTIONS OF MEDICAL MEN TO SURGICAL PROGRESS*

WILLIAM J. MAYO, M.D.
ROCHESTER, MINN.

When I began the practice of medicine, hospitals had surgeons and clinicians who were differentiated by title, but in actual practice the surgeon was a clinician who devoted more of his time to surgery than to medicine. The surgeon made the general examination and the diagnosis, operated on the patient, and cared for him after operation.

Until late in the nineteenth century, surgery consisted largely of operations of necessity. A few leaders were studying certain surgical fields and developing them along the lines of surgery of expediency, but generally speaking only acute conditions such as strangulated hernias, infections, traumatism and comparable emergencies led to the necessity for operation.

With the growth of knowledge, however, competition between medical and surgical treatment became more acute. On the one hand was the conservative clinician who objected to operation for many conditions which finally were recognized to be surgical. On the other hand was the surgeon who advanced too far and too rapidly into a field in which some of the patients, but not all, needed operation. The competition between medicine and surgery, however, was not unhealthful. The clinician acted as a brake on the surgeon, and the surgeon was obliged to convince the clinician by his results just what cases were surgical and what surgery could accomplish.

Even fifteen years ago there were many general surgeons of wide experience who could perform skilfully operations of necessity and a great variety of operations of expediency which were at that time fairly well understood. Today there are few.

Today the enormous advance in surgery has split the surgical profession into groups of specialists in fields which often are small, possibly too small. The surgeon has largely lost touch with general medicine, and because of this limitation he is dependent on the clinician as never before. We see on every hand evidences of understanding and acceptance of this interdependence, in the joining of internists and surgeons in groups, in order to make combined scientific knowledge more readily available in the best interest of the patient.

If medicine is considered in its broader sense, the man who has been trained in medicine and who has not lost himself in an attempt to memorize the minutiae of laboratory technic more nearly has maintained his place as a well informed practitioner than has the surgeon.

CLINICAL INVESTIGATION THE HANDMAIDEN OF MEDICINE

In experimentation on animals it is seldom possible to reproduce the conditions that exist in the human being in such manner as will enable direct comparison, because experiments are made on animals in a state of health, whereas the application of the results of the experimentation must be made on human beings who are sick. This is well illustrated by the results of that great work introduced by Hunter and Royle on the sympathetic nervous system. Removal of sympathetic

* Read before the Section on Practice of Medicine at the Eighty-First Annual Session of the American Medical Association, Detroit, June 25, 1930.

ganglions from healthy animals would in no sense have given complete information as to the practical use of the procedure.

Again, the inability to make direct comparison between experimental conditions and the disease from which the patient suffers is seen in the study of "indigestion," an old-fashioned word for conditions which have been studied for 2,000 years; for instance, for ulcers of the stomach and of the duodenum. Ulcers produced experimentally are apparently of a different kind from those produced in the human being by disease. The clinician has taught the surgeon that certain types of ulcers of the duodenum, in the earlier stages, may be cured without operation; and there is rather general agreement between the clinician and the surgeon that ulcer of the stomach is a more serious disease which cannot always be distinguished from carcinoma.

Even those investigators who do not believe that cancer of the stomach often has its origin in ulcer admit that cancer on ulcer does occur in a percentage of cases, which Hurst, of Guy's Hospital, London, puts at about 20 per cent. In my experience, while the percentage in which the histologic examination of excised cancers of the stomach for evidence of preceding ulcer varies in different series of cases, the development of gastric cancer on some type of demonstrable precancerous disease such as ulcer is present in more than 25 per cent. It must be borne in mind that in a large number of cases the disease is so extensive as to render it impossible to speak definitely of what preceded the carcinomas, just as it is a matter of common experience that purely clinical evidence is likely to be fallacious.

In any event, cancer does not originate in sound tissues.

NEW MEDICAL PROBLEMS WITH SURGICAL ASPECTS

In the short time at my disposal I shall touch lightly on a few problems that concern medicine and surgery; these depend on a better understanding of physiology and have been developed through experimentation on animals and through clinical investigation.

In the elucidation of the relation of iodine to disturbances of the thyroid gland, we owe much to Marine and Plummer. Plummer showed that, contrary to generally entertained views, the introduction of iodine would remove the immediate effects of the deleterious secretions of the excited thyroid gland and restore the patient to a condition in which thyroidectomy, formerly a hazardous operation, became one of safety. Plummer also demonstrated that, although iodine had this remarkable effect, the improvement produced was to a large extent temporary and iodine was in no sense curative. The surgeon no longer depends on his own clinical knowledge in the diagnosis of thyroid disease, and only decides on an operation when unaided by the clinician and the metabolic laboratory.

Of great importance are the suprarenal glands and their different secretions from the cortex and the medulla. Gaskell pointed out that certain small medullated nerves pass from the anterior horns of the spinal cord to the great sympathetic ganglions and that this communication is direct from the cord to the ganglions, with the single exception that certain of these nerves pass through the suprarenal glands en route to the ganglions, linking the cerebrospinal nervous system through the chromaffin cells in the suprarenal glands with the sympathetic system. The growth of knowledge of the function of the suprarenal glands in the last fifteen years has come through the work of clinicians and their co-workers in laboratories. Of organs which are bilateral, if one is sound it is sufficient for bodily purposes, and this is true of the suprarenal glands. In a number of cases I removed a suprarenal gland because it was involved with a diseased kidney, and in a subsequent clinical study I was not able to find that there was any demonstrable effect on patients who had only one suprarenal gland remaining. The koala or "native bear" of Australia, a mischievous little arboreal marsupial, has a relatively small amount of suprarenal tissue, usually a small gland on one side and a rudimentary gland on the other. The fact that this "bear" lives exclusively on the leaves of the eucalyptus tree and does not show evidence of suprarenal deficiency might suggest that the eucalyptus leaves furnish some epinephrine-like substance.

These important glands, the thyroid gland and the suprarenal glands, closely associated with the vascular phenomena of disease, are also so closely connected with the sympathetic nervous system as to have formed the basis in certain obscure diseases for a new attack by a combined effort of clinicians and surgeons. Raynaud's disease has been definitely checked in its progress by operations on the sympathetic ganglions and nerve trunks, as have certain types of arthritis which lead to permanent crippling and deformity. Patients with thrombo-angiitis obliterans have been benefited by removal of the sympathetic ganglions. It has been shown that excision of the lower sympathetic ganglions appears to have marked influence on the congenital types of dilatation of the colon grouped under the general heading of Hirschsprung's disease.

In considering the parasympathetic system of Langley, one wonders whether the vagus nerves may sustain an unsuspected relationship between the emotions and the heart, just as one wonders as to the exact relationship of Langley's pelvic parasympathetic nerve to certain obscure happenings in and around the bladder and the pelvic portion of the sigmoid colon and the rectum.

Studies of the interrelation of the central nervous system with the sympathetic nervous system, internal secretions, hormones, vitamins, light rays, and other biochemical phenomena which have to do with foods, are contributing new knowledge of the human economy for application in medicine and surgery.

When one tries to visualize the various forms of autonomic control, one may postulate that plain muscle fiber was among the very earliest of the self-controlled organs. Nonstriated muscle originates its own action, and within the limits of the influences which necessitate the action it is self-sufficient. The production of power to carry on the vegetative functions lies in the nonstriated muscular system, and the ultimate source of this power is molecular and colloidal energy released through enzyme action, which is as marvelous as the energy in radium. For example, the intestines have two peristaltic beats, the first the ordinary peristaltic movement, once or twice to the minute, and the second the beat that acts as the heart of the portal circulation, forcing the portal blood into the liver, eighteen or twenty times to the minute. All the metabolic functions are closely related through the nodal system with the vascular system, the sympathetic ganglions and the internal secretions.

In the unconscious control of the autonomic functions through the sympathetic and the parasympathetic nerves and the related organs of interaction, one might imagine that the heart is still showing the effect of an early form of control by primitive emotional centers which existed long before the intellectual organs developed.

Our emotions and capacity for acquiring knowledge are hereditary. Emotions may be said to be the outgrowth of those experiences which we call instincts in lower animals, reactions which existed before the development of true intellectual centers. Education adds to the store of knowledge, as far as capacity exists, and helps to control the emotions; but in this very control of emotions may lie danger to the heart. Plain muscle is unconscious and self-controlled; striated muscle is under conscious control. But the heart is composed of a primitive type of striated muscle. Does this indicate an ancient form of control by unidentified emotional centers? Does the anatomically low origin of the vagus nerve indicate such a primitive cardiac function? Note the direct connection of the suprarenal glands with the sympathetic ganglions. In other words, does stern control of the emotions throw stress on the musculature of the heart and lead to degeneration of the muscle of the heart and to coronary disease? From the dawn of history to the present day, the heart as the seat of the emotions has been pictured in prose and poetry in every language by the orator and by the layman and has lost none of its appeal today. Let us not be too scornful of an immemorial recognition of the emotion-heart phenomena which may have a physical basis. A supreme relationship originating in that shadowy day when hunger, fear, love and hate ruled the early ancestral state, and the psychic influence of this relationship have lost none of their magic.

Does this lead us to believe that by further refinements of diagnosis in the hands of physicians familiar with the electrocardiograph and other methods of precision the surgeon will be enabled, in early cases of impending disease of the heart, to relieve the strain on the heart by division of nerve fibers or extirpation of sympathetic ganglions? Spasmodic constriction of the arteries in Raynaud's disease, Buerger's disease, and scleroderma of the extremities, face and neck of vasospastic origin, and some types of arthritis in susceptible persons, eventually leads to vascular obstruction. In the final analysis, heredity may be a controlling factor. In such cases, sympathetic ganglionectomy and trunk resection in the hands of Adson and his co-workers have given encouraging results. How about the heart? Is angina pectoris a similar phenomenon, and coronary and myocardial disease the end-result?

I come now to a matter of great significance to the medical profession. It was noted in the Royal Victoria Hospital of Manchester, England, that the death rate among the surgeons on the staff was more than three times that among medical practitioners in the same age period. It is true that much of the disability among surgeons is due to the fact that surgery is to a certain extent a handicraft and that age and anxiety produce a reduction in skill; but, after all, that is not the most serious consideration. The keen clinician, as he grows in experience, becomes more and more valuable as age advances. He is not exposed to those malign influences of anxiety and responsibility to the same extent as is the surgeon. One might say that the clinician sees his patient drowning and throws him the best means of relief that he has, but that the surgeon in order to give relief jeopardizes the patient anew, and in a different way, that relief may follow.

It is noticeable that a common cause of death among surgeons is disease of the heart, especially coronary stenosis, coming on in the latter part of the sixth and the early part of the seventh decade of life. In all other respects the surgeon maintains his general health equal to others, and often postmortem examination does not show evidence of other serious disease. The tendency to death from heart disease is not confined to surgeons but is common among all men who live lives of stress, in which stern control of the emotions is necessary.

With the better understanding of general physical conditions, I hope there may be an advance in the understanding of certain diseases of the heart which directly concern the surgeon. I recall with great sadness my many friends among surgeons who, around 60 years of age, have died from coronary stenosis and disease of the cardiac muscle. With the remainder of their bodies in excellent condition, why should many men who work under great emotional strain, controlled by effort of will, succumb to this deadly malady?

Here is a problem for clinical investigation which demands the aid of experimental investigation and laboratory studies, in which the surgeons may possibly aid in affecting their own salvation.

ABSTRACT OF DISCUSSION

DR. FRANK BILLINGS, Chicago: About twenty years ago I was shown over St. Mary's Hospital and the laboratories. I complimented Dr. Mayo on the clinic and said to him, "Your clinic will never be a complete success nor accomplish as much as it should until you have added beds for medical patients." I think that "sank" in because in the next few years medical beds were added and the medical staff was organized more fully. They had good physicians on the medical staff. Drs. Plummer, Graham and others, but about eleven years ago the whole medical staff was organized and L. G. Rowntree was added as director of the medical clinic. No one can deny that since medicine has taken such a part in the Mayo Clinic it has progressed more fully and accomplished more than ever since the clinic was organized. At the Mayo Clinic and at many other big clinics in the country much has been done to perfect operative surgery and to make real productive discoveries that the medical man could not have done, in teaching living morbid anatomy, which could not have been known otherwise. When Will Mayo began the practice of surgery he was a good all-round practitioner of medicine and, as he said, speaking of the older surgeons, they were obliged to examine the patients thoroughly and finally come to the conclusion that surgical treatment was required. I hope that something may be done to restore the old practitioner in his relationship to surgery and the specialties of surgery and medicine. At the Mayo Clinic the surgeons specialize. At the clinic are resourceful men who could examine a patient as a human being and tell in 85 per cent of the cases what was the matter, without resorting to the scientific and ultrascientific refinements of diagnosis. But nowhere in medical or postgraduate schools is that resourceful medical man being trained any longer. And I want to know how soon in the future the human being will be taken apart and examined as a case and not as a whole human being. It is absolutely necessary that the development of resourceful men in medicine be maintained and encouraged, men who will go on and by bedside experience, studied observations and deductions, be able to tell what problems may be solved and what are worth solving.

DR. MERRITTE W. IRELAND, Washington, D. C.: The surgeon asks the advice of the nonoperating internist as he asks that of the roentgenologist and the hematologist, but when he makes his diagnosis and his decision as to the need for an operation I believe that he thinks more as an internist than as an operator. Group medicine has probably come to stay and I believe that one of the advantages arising from it is the closer approach of the points of view of the members of the group. Of the straight-out gifts of medicine to surgery, few have been more strikingly useful than the work of Marine and Plummer showing the relationship of iodine to goiter and the benefits that follow its proper use as a preventive of the disease or in preparation of patients for operation. Another valuable gift in regard to goiter is the use of the basal metabolism estimation, now become a routine part of the examination of such

patients. The rapid advances in endocrinology will all aid surgery as they will medicine and I think the suprarenal glands and their connections with the sympathetic nervous system quite as important as Dr. Mayo does; but thrombo-angiitis obliterans, one of the diseases named as benefiting from sympathetic ganglion excision, has been apparently cured in a much greater number of instances, some of them in the army, by intravenous injections of hypertonic salt solutions and abstention from tobacco, as advocated by Dr. Silbert of Mount Sinai Hospital. This treatment is a gift that should notably diminish the number of mutilating operations. Another gift having a similar effect is that of insulin. Not only has it diminished the number of amputations often of almost hopeless character but it has made other necessary surgery almost as safe for the diabetic as for the nondiabetic patient. In return for these operations of which it is depriving surgery, medicine is giving surgery many opportunities to treat diseases of the lungs. Tuberculosis, abscess, tumors, all regarded as beyond the reach of surgery only a few years ago, are among its more recent conquests. The use of liver in the treatment of anemias is a blessing to surgery, as it is to medicine. The increased knowledge of vitamins and of the baneful effects of their deficiency work for the benefit of surgery as well as of medicine, for next to infection the deprivation diseases could do more than almost anything else to darken surgical prognosis. To the army surgeon, for whom tropical abscess of the liver used to be so formidable, the gift of emetine has been a great blessing. Open operation for this trouble is now supplanted by aspiration followed by the administration of emetine, and the results are much better. But of all the gifts of medicine to surgery none is greater than the making of an internist of the surgeon. And surgery has reciprocated by giving the internist more of a surgical outlook and better surgical judgment.

SULPHEMOGLOBINEMIA *

GEORGE A. HARROP, JR., M.D.
AND
REGINALD L. WATERFIELD, M.D.
BALTIMORE

Sulphemoglobinemia is a condition in which the abnormal pigment sulphemoglobin is found in the red blood cells. The pigment is a combination of sulphur and hemoglobin and is formed in the circulation only under abnormal conditions. The disease is characterized by a cyanosis which may reach any degree of severity and yet is unaccompanied, except in the rarest cases, by respiratory distress.

The condition is reputed to be of great rarity. In the whole literature there are not more than thirty cases described; the literature of this country contains only five cases; and it was recently said of Mackenzie Wallis, who had collected five cases himself, that he had seen more than any single observer. Yet in this clinic we have observed eight cases in half a year, and altogether ten in three years—a number that triples the total for the American literature, bringing it up to fifteen cases.

THE "RARITY" OF THE DISEASE

Although so few physicians have reported cases of this condition, many of that small number have reported two or more cases. Again, by far the greater number of the cases recorded have been reported in the last few years. These facts would, on the face of them, suggest that it is not so much the disease itself that is rare, as the recognition of it.

The reason for this, perhaps, is that the signs and symptoms that make up the characteristic clinical picture of sulphemoglobinemia are common to many other conditions. The cyanosis in the less extreme cases can easily be ascribed by the physician to some mild degree of heart failure or emphysema, or even to an abnormality of complexion. The constipation, headache and emotional instability which so often accompany the disease form together such a common syndrome that these symptoms are liable to be passed over as merely incidental. And finally the constipation itself offers another loophole of escape from an unexplained cyanosis: by way of the epithet "muddy" so frequently applicable to the complexion of women who suffer from constipation. Thus it is possible that many cases of sulphemoglobinemia have been diagnosed as cases of chronic constipation, emphysema, or mild cardiac insufficiency.

Before 1905, when van den Bergh [1] first distinguished between sulphemoglobin and the closely allied pigment methemoglobin, the two pigments had been confounded together under the single name methemoglobin. This confusion did not, however, terminate with van den Bergh's discovery. It was implicitly assumed on the one hand that the excessive ingestion of aniline derivatives always produced methemoglobinemia, and on the other hand that their ingestion never produced sulphemoglobinemia.

The situation was enormously clarified in 1925 when Snapper [2] showed that the aniline derivative, acetphenetidin, when taken by mouth could not only produce sulphemoglobinemia but could produce it much more readily than methemoglobinemia. He observed this in two cases in which there was excessive use of acetphenetidin, and he confirmed his observations experimentally by feeding acetphenetidin and sulphur to three human subjects and a number of dogs.

Snapper's theory was that the ingestion of acetphenetidin by mouth in some way or other "sensitized" the hemoglobin so that it would combine with the hydrogen sulphide, normally absorbed from the intestine, to form sulphemoglobin. The feeding of sulphur simultaneously with the acetphenetidin hastened the formation of the pigment by increasing the intestinal production of hydrogen sulphide.

REPORT OF CASES

There is no occasion to do more than review briefly our ten new cases of sulphemoglobinemia. In all the cases sulphemoglobin was found and confirmed by the various tests described here; and in not one single case did we find so much as a trace of the allied pigment methemoglobin. The pigment of sulphemoglobin was never found in the plasma, and it was found in the urine of only one patient, who had an incidental hematuria. The table shows the remarkable frequency of addiction to drugs containing aniline derivatives, and of habitual and severe headache and constipation in this disease.

Case 10 is exceptional: it falls into a separate category and will be discussed by itself.

Drugs.—In regard to the matter of drugs, it will be seen that only one of the first nine patients stated that he did not take aniline derivatives. This was patient 3. Although he said that for many years he had taken miscellaneous headache medicines (e. g., antikamnia), he said that he had not taken anything except "aspirin" for four years. The acetylsalicylic acid he had taken in extremely large doses. This man we considered a very unreliable witness, and we are of the opinion that

* From the Medical Clinic of the Johns Hopkins Hospital.
* Read before the Section on Pharmacology and Therapeutics at the Eighty-First Annual Session of the American Medical Association, Detroit, June 27, 1930.

1. Van den Bergh, A. A. H.: Deutsches Arch. f. klin. Med. 82: 86, 1905.
2. Snapper, I.: Deutsche med. Wchnschr. 51: 648, 1925.

it is probable he was taking such things as acetphenetidin with his acetylsalicylic acid, possibly unknown to himself. In the ward and in the dispensary acetylsalicylic acid was continued but aniline derivatives were withheld, and his cyanosis gradually disappeared.

The remaining eight patients had all been taking large doses of acetanilid over long periods, and seven of them had been taking the acetanilid in the form of "Bromo-Seltzer," the dose of which varied from "three or four doses a day" to "two or three 30-cent bottles a day."

Headaches.—Habitual and extreme headaches were common to all the nine patients. In most of them, these had started in youth and increased in severity through life. The only exceptions to this were patients

Ten Cases of Sulphemoglobinemia

Case	Sex*	Age, Yr.	Cyanosis	Abnormal Pigment, % by Volume§	Constipation	Headache	Poison
1. G. B.	♀	52	++++	>5.0†	++++	++++	Bromo-Seltzer
2. C. C. R.	♂	56	++++	>5.0†	++++	++++	Bromo-Seltzer
3. S. P.	♂	54	++++	>5.0†	++++	++++	Acetylsalicylic acid ?
4. G. B. O.	♂	41	++	3.0	++++	++++	Bromo-Seltzer
5. R. H.	♂	57	++	4.0	++++	{++++‡ / 0	Bromo-Seltzer
6. V. C.	♀	35	+++	5.5	++++	++++	Bromo-Seltzer
7. E. P.	♂	44	++	4.5	0	++++	Acetanilid
8. W. P.	♀	59	+	±0.2	0 ?	{++++‡ / 0	Bromo-Seltzer
9. Mc. C.	♂	60	+++	5.0	0	++++	Bromo-Seltzer
10. A. S.	♀	35	++++	>5.0†	0	0	Aniline dye + hydrogen sulphide

* In this column ♂ denotes male and ♀ female.
† In cases 1, 2, 3 and 10 no precise determinations were made; the figure given is a minimal one.
‡ Patients 8 and 9 had had habitual headaches which had stopped a few years before admission, but they had continued to take Bromo-Seltzer.
§ Reckoned in equivalents of oxygen capacity of hemoglobin.

5 and 8, in whom headache, habitual before, had suddenly ceased a few years before admission. Both patients, however, had continued to take Bromo-Seltzer in increasing doses.

Constipation.—Of the nine patients, 1 to 6 inclusive had suffered ever since childhood with chronic constipation of extreme degree. In practically all of them there was noticed a definite relation between the constipation and the headache. The three exceptions were patients 7, 8 and 9. Patient 8, judging from her behavior while in the hospital, had a definite tendency toward constipation despite her denial of it. Patients 7 and 9 seemed to be quite normal in respect to their bowels.

Emotional Instability.—This was a striking feature in all the first nine cases and was probably mainly a manifestation of the drug addiction, although it is possible that it was due in part to the chronic constipation and headache.

A Case of Exposure to Aniline Dyes and Hydrogen Sulphide.—This was patient 10, so far excluded from our analysis. Her bowels had not been habitually constipated, nor was she a martyr to chronic headaches or the drug habit. Emotionally she was normal.

Briefly, she had worked three months out of each year for the last four years in a cotton mill with aniline dyes, which smelled strongly of hydrogen sulphide and deeply stained her hands. She had had three previous acute attacks similar to the present one though less severe, each occurring during the period she was at work. They consisted of violent and continual vomiting, with intense headaches, definite mental manifestations, and blueness of the lips and nail beds. In the last attack the cyanosis of the lips and nail beds was extreme. Following the onset of this last attack, after she had begun to become blue, she started taking "headache powders" and had continued with them for three weeks before admission. Examination of the dye showed that it smelled strongly of hydrogen sulphide and that it liberated large quantities of that gas when treated with acid.

Miscellaneous Features of the Clinical Picture.—In three of these cases, 1, 3 and 10, cyanosis was extreme and the patients appeared to be at the point of death. In six of them (2, 4, 5, 6, 7 and 9) cyanosis was pronounced, while in patient 8 it was only slight. In none except case 7 was there any respiratory distress or history of shortness of breath. Patient 7 showed a considerable amount of emphysema, which sufficiently explained that symptom in his case.

The distinctive characteristics of the cyanosis, best seen in the extreme cases 1, 3 and 9, were: (1) its color, which was definitely a lavender-tinted or mauve-tinted blue; (2) its distribution—it appeared most markedly in the lips, mucous membranes of the mouth, and in the nail beds, and, in the extreme cases, also about the nose and ears; it was strikingly absent from the skin in general, which in the severe cases exhibited a curious ivory—slightly yellow tinted—pallor.

In all these cases, on the exclusion of aniline derivatives and allowing only such drugs as the salicylates, acetylsalicylic acid and codeine, the cyanosis underwent a very gradual but definite subsidence. Patient 6 is the only one in whom we are not sure of the progress; for she came only once to the dispensary from a great distance and was not heard of again. But the disappearance of the cyanosis was always very slow: days elapsed before any change was noticeable and in all except the mildest cases traces of cyanosis still persisted after several weeks.

Patient 1 gave an interesting account, verified by her physician, of how high colonic lavage invariably relieved her headache and brought about a gradual diminution of the cyanosis.

DIAGNOSIS

The first step in diagnosis is to establish the fact that the cyanosis is due to the presence of abnormal pigments in the blood. This may be done with a considerable degree of certainty in any but the lowest grades of cyanosis by excluding the physical signs of cardiac or pulmonary lesions and by determining that there is no shortness of breath on exertion. Abnormal pigmentation of the skin must be excluded by careful observation of the distribution of the abnormal coloring.

The second step is to differentiate between the cyanosis of methemoglobinemia and the cyanosis of sulphemoglobinemia.

Color.—Whereas in sulphemoglobinemia the cyanosis is of a mauve-tinted or lavender-tinted blue, the cyanosis of methemoglobinemia is of a blue color tending to chocolate or brown. The distinction is sometimes better appreciated in drawn blood.

Rate of Disappearance of Cyanosis.—If the administration of the offending drug is stopped, the cyanosis, if due to methemoglobin, will diminish with great rapidity and disappear entirely in one or two days; but, if due to sulphemoglobin, many days elapse before the cyanosis appreciably fades, and it will still be present after weeks or months have gone by. Hence a cyanosis disappearing in forty-eight hours may definitely be diagnosed as due to methemoglobinemia; but a slowly dis-

appearing cyanosis cannot so certainly be diagnosed as arising from sulphemoglobinemia—unless one can be sure that the offending poison has been completely eliminated from the patient's system and also, incidentally, from the patient's locker. For we are certain that often, when all possibility of drug-taking has been "definitely ruled out," the patient has a box of acetphenetidin tablets hidden beside the bed.

Constipation.—As we shall explain presently, a history of chronic constipation and of the taking of aniline derivatives over a long period of time makes a diagnosis of sulphemoglobinemia highly probable. The absence of constipation reduces the probability. Furthermore, the history of taking one single very large dose of aniline derivatives, with a resulting high-grade cyanosis, makes it likely that methemoglobinemia is the condition that is present.

SPECTROSCOPIC TESTS

In all but the mildest grades of cyanosis the presence of one or other of the abnormal pigments may be demonstrated with a pocket spectroscope by examining a bright light shining through the ear or the cheek of the patient. In milder cases, and when it is desired to distinguish between the two pigments by differential tests, blood is drawn from the finger into a tube of water, or from a vein into a tube containing oxalate. The blood is then diluted in the tube until one can just see a bright light through it. Normal blood examined in this way cuts out the whole of the spectrum except the orange and red region, which appears as an unbroken strip of color. In blood containing either methemoglobin or sulphemoglobin a dark absorption band is seen cutting the colored strip in two, orange on one side, red on the other. The methemoglobin band is nearly in the middle of the strip; the sulphemoglobin band is more toward the blue side of the middle, so that it makes the orange strip on one side of it narrower than the red strip on the other side.

But the pigments can be distinguished more definitely by certain tests:

1. If a drop of dilute ammonium sulphide or of 1 per cent potassium cyanide is added to the blood, the methemoglobin band immediately disappears; the sulphemoglobin band is unchanged.

2. If carbon monoxide be bubbled through the blood, the sulphemoglobin band shifts slightly towards the blue; the methemoglobin band does not move.

3. With suitable apparatus the wavelength of the band can be measured and the measurements compared with those of the bands given by standard solutions of the two pigments.

4. When both pigments are present in the blood the two bands overlap and appear as a single band. Its double origin can easily be demonstrated by dividing the solution between two tubes and adding to one of them a drop of potassium cyanide. A simultaneous comparison of the two tubes will show that the band in the second tube has been amputated on its red side.

QUANTITATIVE DETERMINATION OF PIGMENT

Quantitative determinations, by a combined gasometric and colorimetric method, were made of the oxyhemoglobin, sulphemoglobin and total (normal plus abnormal) hemoglobin in many of our cases. Unfortunately this was not done in the three most severe cases, which happened to be chronologically the earliest in the series. The interesting result was that the oxygen capacity was remarkably little reduced; in fact, in most of the cases it was normal or even above normal. The amount of sulphemoglobin present at the same time in these cases of moderate severity varied between 3 and 5 per cent by volume, reckoned in equivalents of oxygen capacity of hemoglobin. This means that the total hemoglobin—the sulphemoglobin and oxyhemoglobin together—was greatly in excess of the normal total pigment. It would thus appear that in individuals who are chronic drug addicts and are continually converting part of their hemoglobin into the non-oxygen carrying pigment sulphemoglobin there occurs a compensatory overproduction of blood pigment.

EXPERIMENTS ON DOGS

We confirmed Snapper's observations that, when small doses of acetphenetidin and sulphur are fed simultaneously to dogs, sulphemoglobinemia results after a few days.

We found that the administration of the three drugs aniline, acetanilid and acetphenetidin by themselves could produce methemoglobinemia in dogs. But whereas this condition was produced rarely and only with large doses of acetphenetidin, it was produced with extreme ease by quite small doses of aniline. Large doses of acetanilid also produced it fairly readily. Thus, as regards the production of methemoglobinemia, aniline is an extremely powerful drug, acetphenetidin an extremely mild drug, and acetanilid a moderately mild drug. If, on the other hand, any of these three drugs were given in combination with sulphur, sulphemoglobinemia resulted: but in the case of aniline there occurred a combination of methemoglobinemia and sulphemoglobinemia.

We found it to be invariably true that, whenever methemoglobinemia was produced in a dog, the methemoglobin disappeared with great rapidity from the blood stream. Even when half the hemoglobin had been converted into methemoglobin the lapse of thirty-six hours sufficed for the transformation of methemoglobin back into oxyhemoglobin—for the return of the oxygen capacity of the blood to its original figure.

On the other hand, sulphemoglobin, when once produced, persisted for days without any appreciable diminution in its amount, and weeks would elapse before it had all disappeared from the blood stream.

There was no doubt that in the living body of the dog methemoglobin was extremely unstable and readily reconvertible to oxyhemoglobin; whereas sulphemoglobin was excessively stable and only very slowly removed from the blood.

When hydrogen sulphide was administered to dogs rectally in large doses, extreme dyspnea occurred after half a minute and lasted three or four minutes. During that time hydrogen sulphide was expelled in large quantities from the lungs. The gas, therefore, was absorbed rapidly from the large intestine and eliminated rapidly through the lungs. During this experiment spectroscopic tests showed that no appreciable amount of the gas had entered into combination with the hemoglobin to form sulphemoglobin. This negative result was also obtained in dogs that were receiving aniline derivatives by mouth and were showing various grades of methemoglobinemia at the time.

It would appear, therefore, that the reaction between hemoglobin and hydrogen sulphide is slow, even when the hemoglobin is sensitized to the action of the gas by an aniline derivative. Hence, because of the slowness of this reaction and because of the rapidity with which hydrogen sulphide is eliminated from the blood, the sudden entrance into the blood stream of a large amount of hydrogen sulphide can avail nothing in the production of sulphemoglobin, unless the increased source of supply (e. g., the evolution of the gas in the intestine) is continuous over a long period of time. In that case even minute traces of hydrogen sulphide only slightly in excess of normal will suffice for the production of the pigment.

The last experiment to be mentioned consisted in feeding sulphur alone to both normal dogs and dogs that had been splenectomized. No change occurred in the blood of the normal dogs: but in the dogs whose spleens had been removed sulphemoglobin appeared

fairly rapidly. In some unexplained way the removal of the spleen resulted in the red cells of the blood becoming sensitive to hydrogen sulphide in the same way they do when aniline derivatives are administered.

COMMENT

From these experiments and from our cases it appears that acetanilid poisoning generally results in the production of sulphemoglobinemia. The high incidence of extreme constipation in our series of cases, and the tendency for sulphemoglobinemia to occur in dogs only when sulphur is administered, suggest that normally there is not sufficient hydrogen sulphide absorbed from the intestine to produce appreciable quantities of sulphemoglobin. Hence, apparently, acetanilid is much more liable to produce sulphemoglobinemia in individuals whose bowels are constipated: its occasional appearance in patients whose bowels are not constipated is probably to be explained by an unusually rich hydrogen sulphide producing diet or by an abnormality of the intestinal flora which may result in an unusually rapid putrefaction of the intestinal contents.

Methemoglobinemia, on the other hand, has not been observed in any of our ten cases. This is explained by the great instability of this pigment in the blood stream, so that unless it is produced very rapidly it is destroyed before it is formed in appreciable amounts. Thus one would expect to find methemoglobinemia only in cases in which excessively large doses of acetanilid have been taken, or in which aniline or some other highly potent drug is the offending poison.

We have looked up the records of six cases in this hospital dating back between twenty and thirty years, in which the diagnosis was "acetanilid poisoning with methemoglobinemia." In all, constipation was extreme and the cyanosis was slow to disappear; there can be little doubt that these (and probably most other such cases) were really cases of sulphemoglobinemia.

In cases of sulphemoglobinemia, constipation is in a sense a predisposing cause: it supplies the increased intestinal hydrogen sulphide, and it is probably often responsible for the headache that forms the apology for the drug addiction.

Our tenth case shows that other factors, however, may play the rôle of hemoglobin sensitizer and hydrogen sulphide producer: in that case apparently an aniline dye rich in sulphide was absorbed through the skin.

Our last experiment on splenectomized dogs is of interest in connection with those rare cases of so-called enterogenous cyanosis—cases of both methemoglobinemia and sulphemoglobinemia in which, according to the physicians reporting them, the taking of drugs was definitely ruled out. Many authors have objected that the ruling out of drug addiction in these cases could never be absolute and have maintained that all cases of sulphemoglobinemia and methemoglobinemia are the result of exogenous poisons of one sort or another. We are particularly interested in this problem in view of the fact that one of us had already reported such a case—a case of combined sulphemoglobinemia and methemoglobinemia—and had been convinced that no exogenous poisoning was the cause. Our experiments on splenectomized dogs demonstrate that, at least in these animals, there is one way of producing a true "enterogenous cyanosis." We hope soon to have the opportunity of investigating whether in therapeutically splenectomized patients severe constipation, or the administration of sulphur by mouth, will result in a similar condition—sulphemoglobinemia developing without drugs.

PHRENIC NERVE OPERATIONS IN PULMONARY TUBERCULOSIS

RESULTS IN FIVE HUNDRED CASES *

E. J. O'BRIEN, M.D.
DETROIT

In employing any surgical procedure in the treatment of pulmonary tuberculosis, the main purpose is to allow enough collapse of the lung to cause closure of cavities when they exist, and to give sufficient rest to the lesion to insure its healing.

To evaluate correctly the results of operations on the phrenic nerve for this purpose, therefore, it must be borne in mind that, while these operations are the least burdensome to the patient, they allow the least collapse and add the least amount of rest to the lesion of any surgical measures at our command.

There can be no question that, if it seems probable that the collapse and added rest afforded by phrenicectomy will be sufficient in a given lesion to cause an arrest of the disease, this procedure is preferable to any other. Because of limitations of the procedure, however, extensive fibrotic lesions with cavitation or rapidly spreading soft lesions are in most instances necessarily treated by those procedures from which more extensive collapse of the lung may be expected, namely: artificial pneumothorax or thoracoplasty.

TABLE 1.—*Results of Five Hundred Phrenic Nerve Operations, (from 1926 to 1930)*

	Number	Per Cent
Patients	500	....
Patients with cavity	378	....
Cavities closed following operation	191	50.5
Cavities became smaller following operation	119	31.2
Cavities either closed or reduced in size	310	82.8
Cavities became larger	15	4.0
Cavities remained stationary	53	15.0
Patients had no cavity before operation	40	....
Patients: operation performed for miscellaneous indications	82	....

Unfortunately, however, artificial pneumothorax is often made impossible or ineffectual because of the presence of adhesions and, as thoracoplasty is a major surgical procedure which should not be attempted until after less drastic methods have failed, the physician is often forced to rely upon phrenicectomy to help the patient, regardless of the type or extent of his disease. As a result, it is possible to review a large series of patients from our clinics on which this operation has been performed.

My object in presenting this paper is not to show the varied and intimate results obtained by the use of phrenicectomy in individual patients but to show what may be expected from it in a large series of patients, especially those with pulmonary cavitation. I wish to show the types of lesions, with their location, that have been most favorably influenced by this procedure and also the unfavorable effects following its use.

The series of 500 patients reported here are not selected, but are routine patients that have passed through the clinics at the Herman Kiefer Hospital at Detroit, Maybury Sanatorium at Northville, and the Oakland County Sanatorium at Pontiac. Up to the present time, this operation has been performed on about 700 patients, but the remainder have been operated on too recently for enlightening statistics.

* Read before the National Tuberculosis Association, Memphis, Tenn., May 9, 1930.

Of the series here reported, 378 patients were operated on for cavitation. In 191 of these patients, or 50.5 per cent, the cavities closed following the operation. In 31.2 per cent they became smaller. Therefore, about 82 per cent of the cavities were either closed or reduced in size. A complete analysis of the fate of these cavities is shown in table 1.

Because phrenicectomy allows only partial collapse of the lung, results with it proved more effective in moth eaten cavities and in those with soft walls, especially the smaller ones. It was not usually satisfactory in large cavities or in those with thick walls (table 2). One soft-walled cavity 8 cm. in diameter was closed, however, in a patient in whom it was possible to get an unusually high elevation of the diaphragm. A much smaller, thick-walled cavity in the same lung field was unaffected. The results will, as a rule, be in direct proportion to the amount of elevation obtained in the diaphragm, the size of the cavity and the thickness of its walls. The maximum elevation noted in this series was about 9 cm., and the average was 3 cm. or more.

TABLE 2.—*Results in Different Types of Cavity*

	Total Number	Closed	
		Number	Per Cent
Thin walled cavities	238	134	58.8
Thick walled cavities	84	6	7.1
Moth eaten cavities	56	51	90.0

Although it was found that the best results were obtained with cavities at the base of the lung (table 3), it is possible that the smaller percentage of closures of cavities in the upper lung field was due to the fact that in this region the cavities, as a rule, are larger and have thicker walls than those found at the base. Cavities at the apex are often at the periphery of the lung with the wall of the cavity adherent to the wall of the chest, so that contraction of the elastic tissue of the lung has less tendency to cause their closure. The presence of adhesions over the whole lung surface is, of course, also a factor. It is my experience that similar lesions under favorable conditions will be equally benefited by phrenicectomy whether they are located in the upper or lower lung fields.

I have found in many instances that the results of phrenicectomy have been beyond my expectations. Thus, in 102 patients in which this operation was performed as a preliminary to thoracoplasty, the cavities

TABLE 3.—*Location of Lesion with Results Obtained*

	Total Number	Closed	
		Number	Per Cent
Patients with cavity in upper lung field	311	145	46.6
Patients with cavity in middle lung field	40	25	62.5
Patients with cavity in lower lung field	27	21	80.0

in eight patients closed, and the disease became arrested, making the thoracoplasty unnecessary. In this group, the lesions were quite extensive, usually with considerable fibrosis and with thick-walled cavities. In sixty-one patients of this group, the cavities decreased in size; in twenty-six they remained stationary and in eight they grew larger.

The combination of artificial pneumothorax and phrenicectomy has been especially effective in accomplishing closure of cavities in this series of cases. In those patients in whom both these procedures were used, more than 70 per cent were found in whom the closure of cavities had been effected. In 50 per cent of those patients in whom artificial pneumothorax would otherwise have been unsuccessful because of the presence of adhesions, it was made successful by combining it with phrenicectomy (tables 4 and 5).

In the series here reported, forty patients had no cavity before operation. Phrenicectomy was performed in this group to give added rest and protection to a

TABLE 4.—*Results of Phrenicectomy, Alone, and Combined with Pneumothorax*

	Total Number	Closed	
		Number	Per Cent
Patients with cavity in which pneumothorax was not tried	102	63	62.7
Patients with cavity in which pneumothorax was not possible	131	26	19.8
Patients with cavity in which pneumothorax and phrenicectomy were combined	145	102	70.8

rather inactive healing, to a healed lesion, or for early infiltrative lesions that did not seem extensive enough for pneumothorax. In this group, the lesion progressed to cavitation in only one patient. In this patient, only a slight elevation of the diaphragm was affected.

In eighty-two of the patients, the operation was performed for indications not pertinent to this paper, such as bronchiectasis, before reexpansion of lung following a successful artificial pneumothorax, and following complete thoracoplasty. In this group, also, were some patients who left the hospital and could not be traced.

As evidence that collapse therapy rarely has a deleterious effect on lesions existing in the contralateral lung, and that it is not the direct cause of spreads to the so-called good lung, I present the following observations: In 288 patients there were bilateral lesions before operation. In 120 patients, the so-called good

TABLE 5.—*Results of Phrenicectomy with Unsuccessful Pneumothorax (Cavities Still Open Because of Adhesions)*

	Number	Per Cent
Patients	84	....
Cavities closed	42	50.0
Cavities became smaller	36	42.8
Cavities unchanged	4	4.8
Cavities became larger	2	2.4

lung was clear. In seventy-five of the patients, or 26 per cent, the disease in the contralateral lung healed completely along with the lesion in the operative side. In 152 patients, or 52.7 per cent, the lesion in the contralateral lung improved. In more than 78 per cent, therefore, lesions existing in the contralateral lung either healed or improved. In only forty-five patients, or 10.7 per cent, a spread occurred to the good lung, or there was an activation of the disease already existing there.

While it is always difficult to say that the results obtained in individual patients might not have been realized if the operation had not been performed, a comparison of a large number of patients treated surgically with a similar group, in which only routine treatment of rest in bed was used, gives a fair basis on which to judge the merit of the procedures.

As surgical measures are most commonly used in those patients in whom pulmonary cavitation exists, I have compared a group of 100 such patients in whom only routine rest in bed was given with the operative group here reported. The cavities in both groups were as nearly similar as possible. In the control group, the mortality is much lower than most observers have reported in similar patients, so it would seem that the comparison made here is a fair one (table 6).

Following phrenicectomy there is usually a temporary increase in the amount of expectoration but, in almost

all patients, the cough is made much easier and the amount of sputum in favorable patients then gradually decreases.

Crushing of the phrenic nerve, which gives a temporary paralysis of the diaphragm, allows in most cases too little time for complete healing of the lesion and, I believe, should be used only in very early minimal lesions or when alternating bilateral collapse is anticipated. In my experience, 90 per cent of the patients in whom the crushing operation was performed had to have a second operation in which the nerve was removed to insure proper healing.

TABLE 6.—*Effect of Phrenicectomy on Sputum*

	Number	Per Cent
Patients with positive sputum before operation.....	329	87.0
Patients with negative sputum after operation.....	178	52.2

Much is written about the dangers and complications following this operation and, while I believe that much harm could come from its use in inexperienced hands, I have been fortunate thus far to escape many unfavorable accidents.

In this series, sympathetic nerves were injured four times. A mild Horner's syndrome was present in all four patients. In three of these, the symptoms disappeared in a few weeks and the eye became normal. In one patient, more than a year elapsed before the eye returned to normal. As these sympathetic nerves are occasionally very large and may run in the same direction as the phrenic nerve, I believe this accident will be difficult to prevent, especially as pain in the shoulder is often complained of when these nerves are grasped. Numerous communications between the sympathetic and phrenic nerves add to the danger.

Lobar pneumonia developed three days after operation in another patient and resulted in death. A considerable number of patients, especially those in whom the operation was performed on the left side, have noted some gas and indigestion for a time after the operation. This is not of a serious nature, however, and gradually disappears. In one patient, frequent vomiting attacks occurred afterward, but a careful history brought out the fact that this occurrence had been noted before operation. Several small hemorrhages have been encountered from the transverse vein of the neck; none were serious. There has been no injury to the thoracic duct, brachial plexus, pneumogastric nerve, large vessels, recurrent laryngeal nerve, or other accidents frequently reported. Two hundred and eleven patients are either quiescent or in an apparently arrested condition at the present time. Of the patients with positive sputum before operation, 52.2 per cent became negative after operation (table 6).

In one patient, after a crushing operation, there was no paralysis of the diaphragm. No accessory nerve was found at this operation. The patient was operated on a second time, the same nerve found, and 22 cm. removed. A careful search was made again for an accessory nerve, but none was found. The diaphragm was not paralyzed. This is the only patient in the entire series in whom the diaphragm was not paralyzed following an operation in which the phrenic nerve was taken out either entirely or in part. I believe, therefore, that perhaps too much stress is laid on the necessity of a protracted search for accessory nerves, for in no other patient has my purpose been defeated because of failure to locate them.

It has been my experience that it is dangerous to do a phrenicectomy early after pneumothorax has been instituted, especially if a large amount of air has been introduced into the pleural cavity in a short space of time before the mediastinum has become stabilized or the vital capacity readjusted. One patient in the series was nearly lost in this manner and only a hurried removal of air saved the situation. In this patient, an immediate elevation of 6 cm. was noted in the diaphragm.

No empyemas have been encountered following the operation, but in some instances fluid has developed in those patients who were undergoing pneumothorax treatment; but as nearly all patients under pneumothorax treatment develop fluid at some time or other, no especial significance can be attached to this.

I have not been convinced that fewer effusions will be encountered under pneumothorax treatment if a phrenicectomy is combined with it, but the use of a smaller amount of air will afford a much more stable collapse.

Few patients will be found to be alike, and in any large series, many anomalies will be found and difficulties encountered. Phrenicectomy is not an operation to be considered lightly. My experience with it, however, has been a pleasant one and I believe that a careful study of the results, as shown in the accompanying tables, will be sufficient to warrant its more extensive use.

10 Peterboro Street.

SENSORY DISTURBANCES FOLLOWING OPERATIONS ON THE KIDNEY

I. POST-TRAUMATIC STATE OF TWELFTH INTERCOSTAL NERVE SIMULATING URETERAL PAIN *

C. B. HUGGINS, M.D.
AND
PAUL C. BUCY, M.D.
CHICAGO

Minor sensory disturbances in the loin following surgical intervention are exceedingly common postoperative annoyances: they will be considered in detail in a later report. A less common but more troublesome occurrence is the result of trauma to the twelfth intercostal nerve producing severe postoperative pain which may closely resemble the initial complaint. Such sequelae have been inadequately dealt with in the urologic literature, and we shall consider this symptom-complex here.

The commonly accepted interpretation of visceral pain is that advanced by Head.[1] The impulse produced by a painful stimulus to an internal organ is conducted by the autonomic nervous system to those segments of the cord in which that particular organ is represented. There it comes in close connection with the fibers for painful sensation from the surface of the body which arise from the same segments. But the ability to localize stimuli on the surface of the body is enormously in excess of that in the viscera and thus, by what might be called a psychic error of judgment, the diffusion area is accepted by consciousness and the pain is referred to the surface of the body instead of to the organ actually affected. According to Head, the cerebrospinal path-

* From the Department of Surgery, University of Chicago.

1. Head, Henry: On Disturbances of Sensation with Especial Reference to the Pain of Visceral Disease, Brain **16**: 1-133, 1893; Studies in Neurology, London, Oxford University Press, 1920, volume 1.

ways by which we recognize kidney and upper ureteral pain include the tenth, eleventh and twelfth dorsal, and the first lumbar segments of the spinal cord.

Sherren [2] discusses the development of pain and hyperesthesia in the distribution of the twelfth intercostal, iliohypogastric or ilio-inguinal nerve following renal operations and attributes these symptoms to partial section or inclusion of the nerve in scar tissue. He does not present any specific instances in which this has occurred. In addition, Newman [3] discusses "neuralgia" of the dorsal and lumbar nerves giving rise to a pain in many respects resembling renal colic. He states that, when due to a perineuritis, painful spots may be found along the course of the nerve or its branches. Apart from herpes zoster, we have not recognized this condition. Livingston [4] discusses thoroughly skin hyperesthesia in renal disease.

Pain resembling that produced by various visceral diseases (appendicitis, gallbladder disease, pleurisy) but due to "intercostal neuralgia" and disease of the spine has recently been discussed by several writers (Carnett,[5] Cottrell,[6] Knappenberger [7] and Pritchard [8]). But abdominal pain as the result of trauma to the associated nerves has rarely been reported. Küster [9] reports a case of neuralgia of the ilio-inguinal nerve following an Alexander-Adams operation.

The case that we report concerns a patient with pain in the right loin, groin and thigh, resembling ureteral pain caused by surgical trauma of the right twelfth intercostal nerve secondary to exploration of the kidney. A careful search of the literature has failed to reveal any reference to this condition other than that of Sherren.

REPORT OF CASE

Pregnancy, albuminuria, edema and hypertension. Therapeutic abortion. Pyuria. Exploration of right kidney. Pain in right side of back and groin. Hyperalgesia of same area. Resection of traumatized twelfth intercostal nerve. Complete recovery.

History.—In the spring of 1926, during the course of her third pregnancy, M. H., a white woman, aged 29, developed generalized anasarca, oliguria and failure of vision and was told that she had a high blood pressure and marked albuminuria. Because of this a therapeutic abortion was performed in May, 1926. Subsequently the patient was very ill and because of pain, high fever and a marked pyuria an exploration of the right kidney was done in June, 1926, three and one-half weeks after the abortion. She was told that pus was found about the kidney. She made a slow but progressive recovery until the spring of 1927, when she began to suffer from a severe sharp pain in the right costovertebral angle which radiated around the abdomen into the right groin and over the anterior surface of the upper part of the right thigh. The pain was very severe and was particularly prominent when she was tired or just before the menses. She had also noted that it was associated with a hypersensitivity of the skin in the same area. Accidentally striking the loin in the region of the incision would produce excruciating pain. She consulted several physicians, who, because of the past history of urinary involvement and of the distribution of the pain, considered it due to ureteral disease, probably stricture, and treated the patient by repeated dilation of the ureter, but without relief.

When she was admitted to this clinic, the pain had become a little more severe, and the patient complained also of frequent headache and marked general fatigue, which she attributed to the loss of sleep that the pain had occasioned her.

Examination.—Marked pallor of the skin and mucous membranes and slight emaciation were revealed, but there were no other general observations of importance.

In the right loin there was found a well healed surgical incision, 11 cm. in length, extending from the middle of the twelfth rib obliquely downward toward the anterior superior spine of the ilium. There was no spasm of the underlying muscles, but there was marked costovertebral tenderness. The right kidney was easily palpated and its lower pole extended 8 cm. below the costal margin anteriorly on deep inspiration. On palpation in the usual bimanual way the kidney was exquisitely tender but, curiously enough, if it was palpated anteriorly there was no tenderness present. The urologic examination was completely negative otherwise.

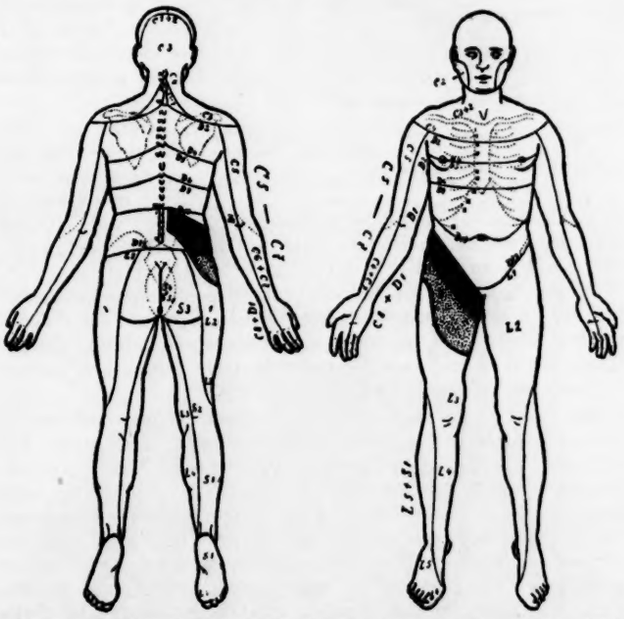


Fig. 1.—Pain and hyperalgesia due to traumatization of the right twelfth intercostal nerve. The black area indicates severe hyperalgesia and site of spontaneous pain; the stippled area, slight hyperalgesia. Following resection of the nerve the black area was totally anesthetic; the stippled was no longer hyperalgesic and showed only slight hypoesthesia, which was present before operation.

Neurologic examination demonstrated an area of hyperesthesia to touch and pain beginning posteriorly about 3 cm. to the right of the midline from the level of the twelfth thoracic spine to the second lumbar spine and extending around the abdomen and downward over the right groin to the genitalia. Over the upper half of the anterior surface of the right thigh the skin was mildly hypersensitive to painful stimuli, but there was a slight hypo-esthesia to touch (fig. 1).

Laboratory Examinations.—The urine was entirely normal. Examination of the blood revealed a definite anemia (which the patient stated had been present for seventeen years). The Wassermann reaction of the blood was negative.

Roentgenograms of the region of the kidney, ureter and bladder and of the dorsolumbar spine did not reveal any pathologic alteration.

A diagnosis of traumatic injury of the right twelfth intercostal nerve was made.

Operation.—Nov. 14, 1929, the old incision was opened, exposing the twelfth intercostal nerve surrounded by a dense mass of scar tissue for a distance of about 3 cm. and at one point presenting a firm spherical enlargement about 5 mm. in diameter

2. Sherren, J.: Injuries of Nerves and Their Treatment, New York, William Wood & Co., 1908.
3. Newman, D.: Pain in Renal and Vesical Lesions, Lancet **1**: 669 (March 25), 725 (April 1), 773 (April 8) 1916.
4. Livingston, E. M.: Further Studies of Viscerosensory Phenomena, J. A. M. A. **82**: 1495-1498 (May 10) 1924.
5. Carnett, J. B.: The Simulation of Various Intra-Abdominal Lesions by Intercostal Neuralgia of the Abdominal Wall, M. J. & Rec. **129**: 64-67 (Jan. 16) 1929; Chronic Pseudo-Appendicitis Due to Intercostal Neuralgia, Am. J. M. Sc. **174**: 579-599 (Nov.) 1927; Acute and Recurrent Pseudo-Appendicitis Due to Intercostal Neuralgia, ibid. **174**: 833 (Dec.) 1927; The Simulation of Gallbladder Disease by Intercostal Neuralgia of the Abdominal Wall, Ann. Surg. **86**: 747-757 (Nov.) 1927.
6. Cottrell, J. C.: Simulation of Visceral Disease by Peripheral Nerve Pain and Tenderness, Colorado Med. **26**: 303-306 (Sept.) 1929.
7. Knappenberger, G. E.: Spinal Nerve Radiculitis Simulating Visceral Disease, Kansas City Clin. Soc. Monthly Bull. **4**: 1-7 (May) 1928.
8. Pritchard, S.: Thoracic Pain Simulating Pleurisy, Tubercle **10**: 569-571 (Sept.) 1929.
9. Küster, S.: Neuralgia des Nervus ilioinguinalis nach Alexander-Adams'cher Operation, Zentralbl. f. Gynäk. **50**: 232-233, 1926.

(fig. 2). The involved nerve was dissected free from the surrounding tissue and severed from the apparently normal nerve above and below. The central end was then injected with absolute alcohol to prevent the formation of an amputation neuroma [10] and the wound was closed.

Course.—Immediately after the operation, although the patient complained of pain in the incision, there was no longer any pain in the groin and the hyperesthesia had entirely disappeared.

Examination ten days after the operation revealed total anesthesia in the area that had formerly shown the most marked hypersensitivity, and a hypo-esthesia to pain and touch over the upper part of the right thigh. She was discharged two days later completely relieved of her pain.

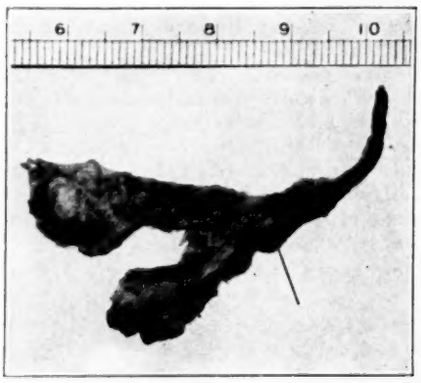


Fig. 2.—Resected nerve showing the mass of scar tissue in which it was embedded. The line indicates the neuroma-like bulb.

She was last seen, Jan. 28, 1930. At that time she had no complaints; the anemia still persists, its cause being undetermined as yet.

Microscopic Description.—The excised nerve was fixed in solution of formaldehyde and embedded in paraffin. Sections were stained with hematoxylin and eosin, and by the methods of Loyez, Freeman,[11] van Gieson and Perdrau.[12]

At the point of the bulbous enlargement, numerous small bundles of nerve fibers were seen widely separated by a dense mass of fibers of collagen and a few fibers of reticulin (fig. 3). These nerve fibers were irregular in their course and seemed to lack any definite arrangement.

The nerve fibers showed almost the same changes both central and peripheral to the bulbous enlargement. The nerve was embedded in a sheath of scar tissue composed largely of collagenic fibers. The neurilemma sheaths were distended with numerous large and small vacuoles. Undoubtedly they contained fat that had been removed in embedding. In the preparations stained for myelin, a very few irregular small masses of myelin remained. The preparations impregnated by Freeman's method for nerve fibers were by far the most interesting. The fibrils were multiplied, so that several might now be seen to occupy one sheath. They no longer remained limited to the center of the small canal formed by the myelin but were scattered throughout, often lying just beneath the sheath. Many of them contained large vacuolated varicosities in their course. Others terminated in a bulb in which the fiber was wound about itself like a ball of twine. In other cases, several fibrils were arranged in formations known as the spirals or helicoidal apparatus of Perroncito (fig. 4).

All these malformations of the nerve fiber were characteristic of the efforts of a traumatized nerve to regenerate, as described in detail by Cajal.[13]

In the same preparation, the incisures of Schmidt-Lantermann were also frequently impregnated.

COMMENT

There can be no doubt in this instance that the pain was due to surgical trauma which produced partial section of the nerve. The pain occurred following operation; the nerve was found bound down in scar tissue and containing a neuroma-like bulb; the pain and hyperalgesia were completely relieved by resection of the nerve, and microscopic examination revealed definite evidence of regeneration of the nerve following severe trauma.

The pain in this case was typical renal pain and was so interpreted by the patient and several others. The reason for this is easy to see, since she had had at one time a pathologic kidney producing true renal pain interpreted through the twelfth intercostal nerve. Recurrence of twelfth intercostal nerve pain was therefore interpreted as of renal origin, while actually it was due to a lesion of the peripheral nerve itself.

From a urologic standpoint the diagnosis was suggested when it was found that the kidney was tender when examined posteriorly and free from pain when palpated anteriorly. The lack of pain in the anterior position was due, of course, to the fact that these nerves ran obliquely downward and palpation anteriorly took place above the hyperesthetic dermatomes. The diagnosis was established by the finding of the cutaneous hyperesthesia on neurologic examination in the presence of a negative urologic system.

The first record of pain resulting from traumatization of a peripheral nerve without complete interruption of its fibers, of which we have any knowledge was published by Denmark [14] in 1813. In this particular instance a small piece of a bullet had become lodged in the radial nerve and the nerve was bound down in scar tissue. This resulted in severe pain and the arm was amputated. In 1838, Hamilton [15] reported a similar instance in which he mentioned various skin changes that are now known frequently to accompany such lesions in the upper extremity. In 1864, Paget [16] gave

Fig. 3.—Bundles of nerve fibers bound down in scar tissue in the neuroma-like bulb. Hematoxylin and eosin stain (× 110).

an excellent description of these skin changes in association with pain due to injury of a nerve. In

10. Huber, G. C., and Lewis, Dean: Amputation Neuromas: Their Development and Prevention, Arch. Surg. **1**: 85 (July) 1920.
11. Freeman, Walter: A Silver Diffusion Method for Staining Nerve Fibers in Paraffin Sections, Arch. Neurol. & Psychiat. **7**: 321-324 (March) 1922.
12. Perdrau, J. R.: The Silver Reduction Method for the Demonstration of Connective Tissue Fibers, J. Path. & Bact. **24**: 117 (Jan.) 1921.
13. Cajal, S. Ramon: Degeneration and Regeneration of the Nervous System, Translated by R. M. May, London, Oxford University Press, 1928, volume 1.
14. Denmark, A.: An Example of Symptoms Resembling Tic Douloureux Produced by a Wound in the Radial Nerve, M. Chir. Tr. **4**: 48-52, 1813.
15. Hamilton, cited by Carter, H. S.: On Causalgia and Allied Painful Conditions Due to Lesions of Peripheral Nerves, J. Neurol. & Psychopath. **3**: 1-38 (May) 1922.
16. Paget: Some Cases of Local Paralysis, M. Times & Gaz. **1**: 331-332, 1864.

1864, Weir-Mitchell,[17] in collaboration with Morehouse and Keen, described many such cases and called the condition causalgia, which name, indicating a combined syndrome of pain, hyperalgesia and skin changes due to traumatization of a nerve, is still in common use. In 1872 Weir Mitchell [18] added further details to this syndrome.

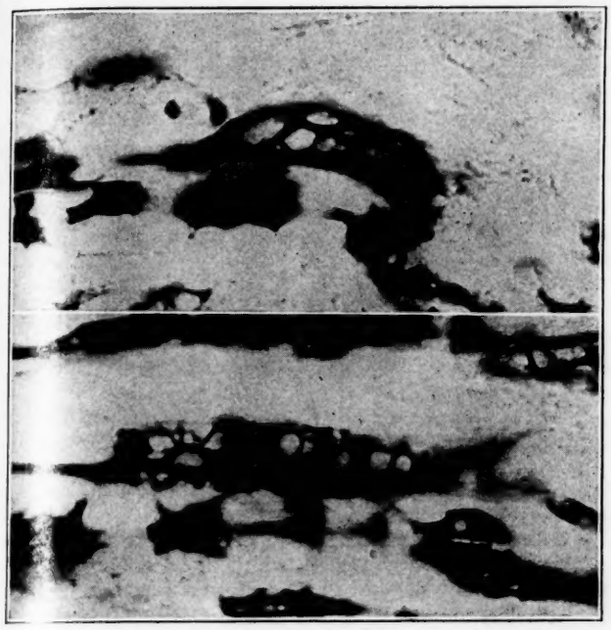


Fig. 4.—Spirals or helicoidal apparatuses of Perroncito. These are typical regenerative phenomena in a severely traumatized nerve. Freeman's silver impregnation method (× 1,200).

However, except in the upper extremity, this association of pain and changes in the skin is infrequent, and, as in the present case, injury of a nerve may result in pain and hyperalgesia without skin changes.

It is interesting in this case that the hypersensitivity extended far beyond the known distribution of the twelfth nerve and over a much wider area than the area of anesthesia that resulted from section of the nerve. The same phenomenon was observed by Head [1] in cases of injury of a nerve without complete severence of its fibers. However, no satisfactory explanation has ever been given. Hence, it should be borne in mind in similar cases that the total area of hyperesthesia does not necessarily indicate that all of the nerves supplying these dermatomes are injured.

Since nerve injury is unavoidable in a not inconsiderable group of renal operations, and especially since minor disturbances of sensation are frequently seen after operation, major involvement of the nerves by neuroma-like formations causing major discomforts must occur in a considerably greater number of cases than a survey of the literature would indicate.

SUMMARY

A case of neuralgia of the twelfth intercostal nerve followed traumatization as a result of surgical exploration of the kidney. The pain radiated from the right flank to the right groin, simulating ureteral pain. There was a marked hyperalgesia in the same area. The nerve was resected, resulting in a complete cure. Microscopic examination revealed evidence of previous severe trauma to the nerve.

The case is presented as an example of a possible complication of operations on the kidney and for consideration in the differential diagnosis of ureteral pain in patients who have had a previous operation in this region.

950 East Fifty-Ninth Street.

17. Weir-Mitchell, S.: Morehouse, G. R., and Keen, W. W.: Gunshot Wounds and Other Injuries of Nerves, Philadelphia, J. B. Lippincott & Co., 1864.
18. Weir-Mitchell, S.: Injuries of Nerves, Philadelphia, J. B. Lippincott & Co., 1872.

METASTATIC MELANOMA OF BOTH EYES

REPORT OF A CASE *

FREDERICK C. CORDES, M.D.
AND
WARREN D. HORNER, M.D.
SAN FRANCISCO

Metastatic tumors of the eye have been reported relatively few times. The uveal tract is the predominating site of such tumors. Ginsberg [1] states that these eye tumors may be the first visible metastases of the primary growth or may be simply part of the general seeding. Often these metastases occur simultaneously with brain involvement, which is easily explained by the fact that the ophthalmic artery arises from the internal carotid.

Carcinomas are easily the most commonly occurring metastatic tumors. Ginsberg [2] in 1928 collected seventy case reports of metastatic carcinoma of the eye, and there have been several additional cases reported since that time. In one fourth of the cases the condition was bilateral. The primary tumor is most frequently found in the breast, and next in frequency in the stomach,

Fig. 1.—Section of primary tumor (nevus in left scapular region).

lungs, liver, suprarenals, thyroid and prostate. Singer [3] reported a metastatic growth from a bladder tumor.

* From the Department of Ophthalmology, University of California Medical School.
* Read before the Section on Ophthalmology at the Eighty-First Annual Session of the American Medical Association, Detroit, June 26, 1930.
1. Ginsberg: Das Auge, in Henke and Lubarsch: Handbuch der speziellen pathologischen Anatomie und Histologie **11**: 562, 1928.
2. Ginsberg: Das Auge, in Henke and Lubarsch, p. 563.
3. Singer: Klin. Monatsbl. f. Augenh. **9**: 541, 1926.

Krukenberg [4] states that 65 per cent of these carcinomas are primary in the breast.

The metastatic melanomas of the eye have all been reported under sarcoma. Ginsberg [1] states that metastatic sarcoma of the uveal tract is extremely rare. Brömser [5] in 1870 reported a melanosarcoma of the choroid that made its appearance one year after the removal of a rapidly growing pigmented nevus of the cheek. The nevus had not been examined microscopically. Brömser believed that this intra-ocular tumor

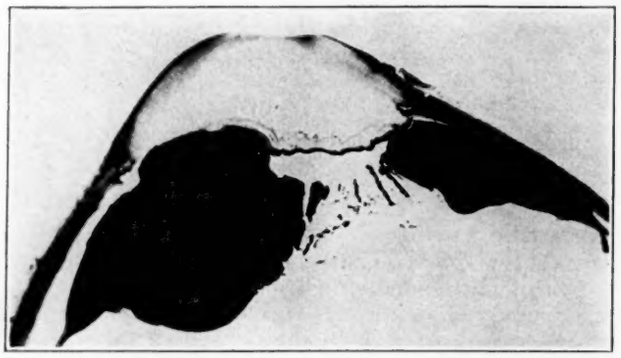


Fig. 2.—Section through anterior segment of the right eye, showing metastases in ciliary body.

was a metastatic growth. Fuchs [6] did not concur in this opinion and, in support, cited Virchow's belief that those organs which have a tendency to develop malignant tumors are rarely the site of metastatic growths. Anton Elschnig [7] held the opposite view and suggested that some cases of supposed primary uveal sarcoma followed by early death without any apparent extension outside the eye might be metastases from some undiscovered primary tumor.

The second case was reported by Schiess-Gemuseus and Roth [8] in 1879. One year after the removal of a pigmented nevus over the sternum, a melanosarcoma of the choroid made its appearance. A year and a half later, the patient died and autopsy showed metastases in the skin and most of the organs of the body. There was, however, no involvement of the brain.

Pflüger,[9] in 1885, described the third case, a monocular metastatic melanosarcoma of the choroid. The patient, a woman, aged 30, had had a congenital nevus over the parotid region which she had scratched because of extreme itching. Following this the nevus had grown rapidly and had been removed one year before she was seen by Pflüger. Since there was evidence of general involvement by that time, enucleation was not deemed advisable. The patient died shortly afterward from an apparent diffuse sarcomatosis. Consent for autopsy was refused and consequently microscopic study of the lesions was not possible.

These first three cases were all secondary to a melanoma of the skin. In addition, a few more instances of metastatic sarcoma have been reported.

In a case first recorded by Lauber [10] and later completed by Adamuk [11] there was a diffuse melanosarcoma of the lids and conjunctiva of the left eye, for which a complete orbital exenteration was done. Two and a half years later there developed a diffuse melanosarcomatosis involving the skin, brain and right eye. Ten Doesschaate [12] reports a similar occurrence in which diffuse metastases of the body and left eye followed removal of the primary melanosarcoma by enucleation of the right eye.

Meiggs and de Schweinitz [13] describe a round cell sarcoma of the mediastinum with metastases to the brain, both orbits, the optic nerves and the choroid. Ginsberg believes that the tumor was probably a malignant lymphoma. Wiener [14] briefly reported a similar case of multiple metastatic tumors of the choroid which presumably had their origin in a sarcoma of the mediastinum.

H. H. Elschnig's [15] case was in a woman, aged 26, with a metastatic sarcoma of the ciliary body which at autopsy was found to be secondary to a spindle cell sarcoma of the ovary.

REPORT OF CASE

History.—C. S., a man, aged 42, entered the University Hospital, Feb. 27, 1929, complaining of headache, weakness and dizziness, with falling to the right. The family history was essentially negative. The only incident of interest in the past history was the removal of a small, black, itching tumor of the back by Dr. C. V. Rugh of Klamath Falls, Ore., in February, 1928.

Present Illness.—The patient was a lumberjack and had always been well until from three to four months before entry, when he began to have headaches and dizziness. One year previous, a black tumor in the skin over the left scapula had developed a troublesome itching, which he tried to relieve by scratching. Following this, the tumor grew rapidly. He saw his physician, who immediately sent him to San Francisco for consultation with Dr. Howard Morrow. Examination at this time showed a melanotic lesion over the left scapular region approximately 3 cm. in diameter, and raised about 5 cm. above the level of the surrounding skin. There were also some small

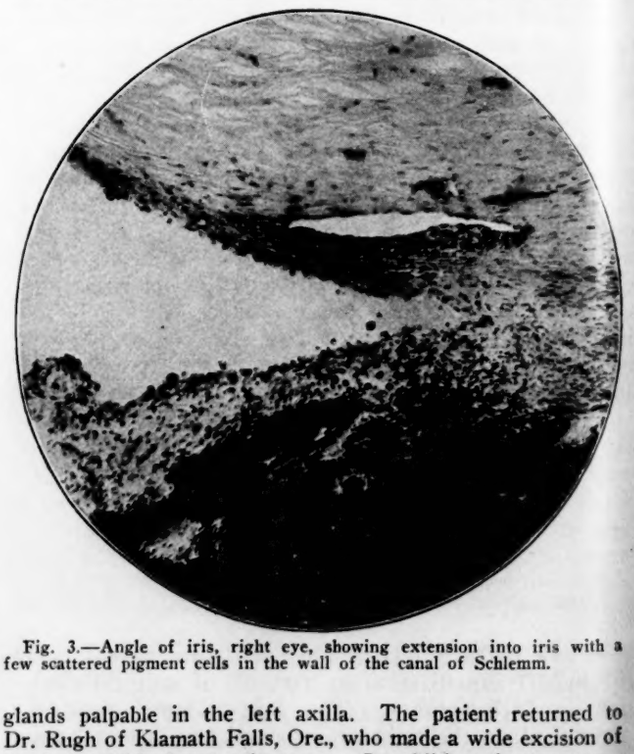


Fig. 3.—Angle of iris, right eye, showing extension into iris with a few scattered pigment cells in the wall of the canal of Schlemm.

glands palpable in the left axilla. The patient returned to Dr. Rugh of Klamath Falls, Ore., who made a wide excision of the lesion with the actual cautery. In addition, deep roentgen therapy was applied to the site of the lesion and the left axilla.

4. Krukenberg: Klin. Monatsbl. f. Augenh. **41**: 145, 1903.
5. Brömser: Inaug. Diss., Berlin, 1870, cited by Leber: Arch. f. Ophth. **31**: 111, 1885.
6. Fuchs, E.: Das Sarkom des Uvealtraktus, Vienna, 1882, p. 238.
7. Elschnig, Anton: Arch. f. Augenh. **22**: 149, 1891.
8. Schiess-Gemuseus and Roth: Arch. f. Ophth. **25**: 177, 1879.
9. Pflüger, E.: Arch. f. Augenh. **14**: 129, 1885.
10. Lauber, H.: Ztschr. f. Augenh. **19**: 132, 1907.
11. Adamuk, V.: Ztschr. f. Augenh. **21**: 505, 1909.
12. Ten Doesschaate, G.: Nederl. tijdschr. v. geneesk. **2**: 1432 (Nov. 8) 1919; Klin. Monatsbl. f. Augenh. **66**: 766, 1921.
13. Meiggs and de Schweinitz: Am. J. M. Sc. **108**: 193, 1894.
14. Wiener: Am. J. Ophth. **19**: 345, 1902.
15. Elschnig, H. H.: Arch. f. Ophth. **117**: 316, 1926.

Microscopic section of the tissue showed it to be a melanotic sarcoma. In three weeks, healing was complete and the patient returned to work. He had no further difficulty until the onset of the headaches mentioned. These were very severe and were frontal in type.

The patient remembered little more except that his headaches persisted and that at times he had had diplopia. In addition, the vision of the right eye had failed greatly.

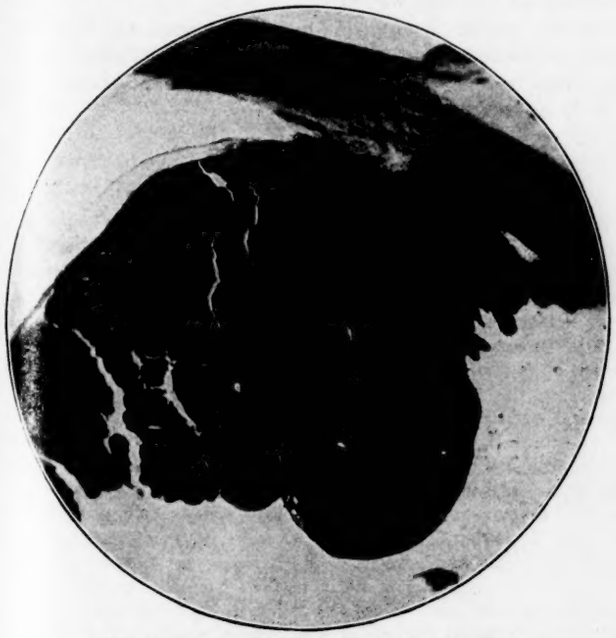


Fig. 4.—Tumor of ciliary body of the left eye.

Physical Examination.—The patient was well developed and appeared a little overweight. The eyes were closed and at examination it was difficult to arouse him sufficiently to obtain answers to simple questions. Cerebration was slow and he often repeated answers two or three times. When left alone, he sank into a semistupor. The skin was normal except for a large depressed scar of from 6 to 8 cm. in diameter over the left scapula. There was no local recurrence.

One large lymph gland was palpable in the left axilla and a few small glands in the inguinal region. Except for the eyes, the remainder of the physical examination was negative.

Examination of Eyes.—Both eyes showed a mild ptosis and a bilateral internal strabismus of a relatively small degree due to partial involvement of the sixth nerve on both sides. There was lateral nystagmus to the right (slow component to the left).

The right eye showed mild ciliary injection; the cornea was normal, and the pupil reacted irregularly to light. In the iris at the temporal side near the limbus was a definite elevation due to a mass behind the iris. This mass, which was globular, could be seen through the pupil and was markedly pigmented. At the nasal side near the limbus was a second small elevation of the iris. The choroid was apparently negative for metastases. The optic nerve showed a typical choked disk with about 5 diopters of swelling.

The left eye showed mild ciliary injection; the cornea was normal. The pupil was irregular. At the nasal side the iris was pushed forward by a black tumor mass that could be seen through the pupil lying between the iris and lens and apparently arising from the ciliary body. In the angle of the iris near this mass was a clump of pigmented cells. The lens showed some grayish striae and was slightly cloudy. The choroid showed no gross evidence of metastases. There was marked choked disk present of about 4 or 5 diopters.

Laboratory tests were negative.

Roentgen examination for possible bone metastases revealed the following positive observations: In the skull the posterior clinoid processes were very thin, probably the result of continued intracranial pressure. The pituitary fossa appeared slightly larger than normal. In the pelvis there was a nodule of diminished density just above the right acetabulum, probably a metastatic growth.

The clinical diagnosis was metastatic melanoma to both eyes with intracranial metastases. As to clinical progress, the patient rapidly went into a deep stupor, from which he was aroused only once, and died on the fourth day of hospitalization with a diffuse pneumonia and cerebral depression. The following is a summary of the autopsy observations of Dr. C. L. Connor of the department of pathology:

Autopsy.—The body was large, muscular, well developed and well nourished. Over the left scapula was a small scar, from which a malignant nevus had been removed. In general, there were metastases of a black tumor in almost every organ of the body. This included the pericardium and myocardium, the lungs, the mesenteric nodes and the intestines at their mesenteric borders, the pancreas and both suprarenals. There were no metastases to the liver, but several small ones were present in the wall of the gallbladder. The kidneys contained innumerable small, black nodules as well as the prostate and testicles. Metastatic nodules were present in the dura, in the cortex of the brain and in the cerebellum, and the tumor had practically completely replaced the pituitary body. A tumor could be seen by external examination in the posterior chambers of the eye.

Sections were made of both eyes in the anteroposterior direction after fixation, including the lens, iris and optic nerve. These showed masses of black tumor in the ciliary processes of both eyes. Microscopically the tumors were made up of melanin-containing cells and other less differentiated cells which did not contain pigment. The latter cells were mostly rounded or polyhedral and contained round or oval nuclei with a moderate amount of chromatin. In many places the cells could not be recognized because of the abundance of pigment present. The cells without pigment contained mitotic figures and gave every evidence of rapid growth. None of the cells had a definite spindle shape. The heads of both optic nerves were congested and edematous.

Sections of the tumor from other parts of the body were essentially similar to those described in the eye. Some contained more and some less pigment.

Fig. 5.—Small isolated tumor of iris of left eye with extension to posterior surface of cornea.

A section from the original growth on the back showed a raised, ulcerated tumor with a fairly flat surface. This tumor consisted of polyhedral cells which were undergoing rapid division and nevus-like cells which appeared to be more quiescent. Most of the cells contained melanin pigment. The tumor appeared to come from the epidermis (fig. 1).

The anatomic diagnosis was melanocarcinoma arising from the skin of the back, metastasizing to the meninges, brain, both

eyes, heart, suprarenals and pituitary body and to nearly all other organs in the chest and abdomen except the liver and spleen. The immediate cause of death appeared to be intracranial pressure, edema and congestion of the lungs, perhaps due to the metastases within the heart, and the almost complete destruction of both suprarenal glands and the pituitary.

Pathologic examination of the right eye showed at the temporal side behind the iris a large tumor 6 by 8 mm. involving the entire ciliary body and pushing the iris forward (fig. 2). In the iris over this mass was a small extension into its stroma, while a few cells were seen in the inner wall of the canal of Schlemm (fig. 3). On the nasal side was a second rather flat metastasis 3 by 7 mm. involving the ciliary body and extending along the ora serrata (fig. 2). The choroid was normal. The optic nerve showed a typical choked disk. The retina was normal except for swelling about the disk.

At the nasal side of the globe of the left eye the entire ciliary body was involved by a neoplasm 4 by 7 mm. (fig. 4). Near this tumor was a small isolated involvement of the iris at its ciliary attachment with extension along the posterior surface of the cornea (fig. 5). The choroid was negative for metastases. The optic nerve showed typical choked disk. About 2 mm. behind the lamina cribrosa in the center of the nerve

Fig. 6.—Small metastatic tumor of optic nerve of left eye.

and in the region of one of the central vessels was a small mass of tumor cells similar to those described in the ciliary body (fig. 6).

A detailed description of the cellular structure of the tumor has already been given.

COMMENT

The case reported here was one of metastases to both eyes from a cutaneous melanoma. This was a congenital nevus of the skin which apparently caused no difficulty until it was irritated by scratching. Following this, a rapid growth took place, and one year after its removal the patient died of multiple metastases affecting nearly every organ of the body.

In the eyes there was involvement of both ciliary bodies, the optic nerve of one eye and an isolated tumor in the angle of the iris. The choroid was normal. Isolated metastases to the ciliary body and iris without disease of the choroid are unusual.

Careful search of the literature has revealed only three similar cases, those reported by Brömser, Schiess-Gemuseus and Roth, and Pflüger. Pflüger's case was not confirmed by microscopic examination, but the history was almost identical to the one reported here. The patient had a congenital nevus that showed no activity until scratched because of itching. Following this the nevus grew rapidly and apparently caused diffuse metastases involving the eye in addition to other structures.

In all three former cases and in the one reported here, metastases appeared in the eye one year after removal of the skin nevus.

In the three cases previously described the tumors were termed melanosarcoma, while at the present time the tendency of pathologists is to classify them primarily as melanocarcinomas.

384 Post Street.

ABSTRACT OF DISCUSSION

DR. MARY KNIGHT ASBURY, Cincinnati: This case is unusual in several respects. Malignant metastases are rarely found in the eye, and when they do occur the common form is adenocarcinoma, most often primary in the breast. I have seen only one metastatic tumor, and that was secondary to a carcinoma of the breast. The metastatic melanotic tumors previously reported in the literature were all situated in the choroid. In this case the ciliary body was principally involved. This is unusual even for primary tumors. In my series of twenty-five melanotic intra-ocular tumors, only two arose in the ciliary body, although in several more the ciliary region was secondarily involved. The unique feature of this case is the bilateral involvement. Primary melanotic intra-ocular tumors seldom metastasize to the other eye. However, it is easy to imagine that bilateral ocular involvement would be more apt to develop when the primary focus was in the skin than when the neoplasm was primary in one eye. From the standpoint of the primary skin lesion, the general history of this case is typical. The unusual feature is the finding of intra-ocular metastases. In a series of seventy primary pigmented malignant neoplasms of the skin, Broders found that the majority of the patients died in the first year following the removal of the tumor.

DR. ADOLPH O. PFINGST, Louisville, Ky.: A few years ago in reporting some unusual cases of choroidal sarcoma before the American Ophthalmological Society I made the erroneous statement that these cases never occur as metastatic growths; that they are always primary developments. At that time my attention was called to a paper by Uhthoff, published in the Festschrift for Rudolph Virchow, in 1891, in which he reported a case of metastatic carcinoma of both eyes with the primary lesion in the lung. He collected from the literature twenty reports of metastatic growths within the eye. Seventeen of these were carcinoma, and only three were of a sarcomatous nature. These are the three cases cited by the authors. Even as late as 1882, Fuchs made the statement that sarcoma does not develop in the eye as a metastatic condition. Surely such an occurrence is rare, for only a few cases have been reported since Uhthoff's publication. (Lauber and Adamuk, 1909, primary melanosarcoma of one eye with metastases in the brain, skin and choroid of other eye. Meiggs and Dr. de Schweinitz, 1894, primary sarcoma in the mediastinum with metastases in the brain, optic nerve and choroid. Elschnig, in 1926, sarcoma of ciliary body secondary to sarcoma of ovary.) Two years ago, Ginsberg collected from the literature seventy case reports of metastatic intra-ocular carcinoma, most of which were secondary to a breast tumor. I recently found reference to two cases of metastasis of sarcoma into the eyes (choroid) reported by G. Ten Doesschate before the Netherlands Ophthalmological Society in 1921. In one case the primary lesion was in the choroid of one eye and the metastatic growth in the choroid of the other eye (as part of a general metastasis). In the other case a melanosarcoma of the choroid of the left eye developed from a pigmented nevus of the breast three years after removal of the primary lesion. So, all in all, there have been reported perhaps less than ten cases of metastases of melanosarcoma in the eye. It is more than likely that some of the tumors of the eye looked on as primary growths were metastatic but that the primary disease was overlooked, or at least that the etiologic relation between the two was not recognized.

ASBESTOSIS BODIES IN SPUTUM AND LUNG*

KENNETH M. LYNCH, M.D.
AND
W. ATMAR SMITH, M.D.
CHARLESTON, S. C.

Asbestosis has, of comparatively recent time, assumed a position of prominent and perhaps peculiar interest in the field of pneumonoconiosis and occupational disease. While the asbestos industry is more than two thousand years old, it is only within the past few years that it has assumed the prominent place which it now occupies in the industrial arts. Until recently asbestosis has been assumed to be essentially silicosis, and the free silica has been thought to constitute the dangerous factor in pneumonoconiosis as contrasted with the relative harmlessness of other dusts.

It has come to attention within the last three or four years that there is a peculiar characteristic in the state of asbestosis, not found in silicosis, and it is our purpose in this report to record some data that have come to hand, since American medicine thus far has no report on this peculiar condition and to the end that particular interest may be stimulated in its study in the extensive asbestos industry. It is expected that a further report of our studies will be made at a later time.

In 1924, Cooke [1] recorded an autopsy on an asbestos worker who had been exposed for twenty years, the last five years intermittently, showing extensive fibrosis of the lungs and chronic tuberculosis. At this time there was seen in the lungs only black particles, from 3 to 393 microns in length, of various shapes.

Fig. 1.—Asbestosis bodies in sputum concentrate; reduced from a photomicrograph with a magnification of 705 diameters.

In 1927, Cooke [2] again recorded this case and cited another in which a patient who had worked in an asbestos mill for ten years showed at autopsy pulmonary fibrosis and spicules of asbestos in the lungs. These two cases are apparently the only records of autopsies in cases of asbestosis up to that time.

In a companion article, McDonald [3] recorded a histologic study of the lung tissue in Cooke's case and stated that the appearances were practically the same as in another case the sections of which were in the possession of Dr. I. M. D. Grieve of Armlay, Leeds. McDonald found, in addition to well marked diffuse interstitial pneumonia, chronic bronchitis and emphysema, anthracosis and extensive tuberculosis, certain peculiar foreign bodies in the alveoli, bronchioles and interstitial fibrotic areas. This is the first recorded observation of these objects, which have since been called "asbestosis bodies." There was considerable disagreement among zoologists, botanists and others as to their nature; McDonald advanced the hypothesis that they are portions of asbestos in process of alteration and absorption by hydrolysis, with the passing of the silica into a colloidal state and later into a gel.

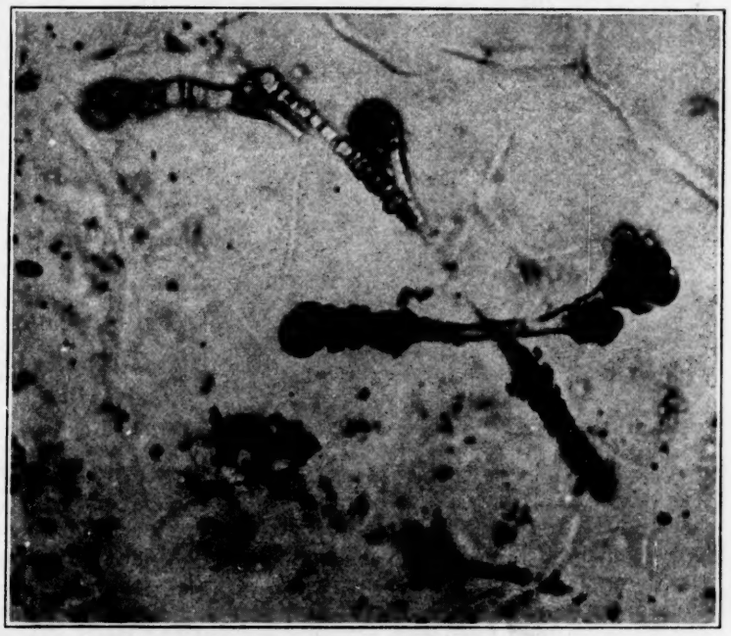


Fig. 2.—Asbestosis bodies in sputum; magnification about 950 diameters.

In 1928, Simson [4] followed with a report of four autopsies on asbestos mill workers in South Africa, the first being done in 1926 without discovery of the asbestosis bodies at the time. One of these subjects worked for twelve months in the mill, developed tuberculosis and died; the second worked for two years in the same mill and had a prolonged pneumonia during this time. This patient had neither tuberculosis nor pneumonia at autopsy but fibrosis of the lungs. The length of exposure of the third and fourth patients is not given, but both died of lobar pneumonia and both showed very little fibrosis. In the lung tissues of all of the four were found "golden yellow" segmented structures with rounded ends.

The descriptions and illustrations by McDonald and Simson make it clear that they were dealing with the same object and that it is the same as we have found in the lungs and sputum of asbestos workers.

In October, 1929, there occurred in the service of one of us (K. M. L.) an autopsy on a patient dead of

* From the Departments of Pathology and Internal Medicine, Medical College of the State of South Carolina.

1. Cooke, W. E.: Fibrosis of Lungs Due to the Inhalation of Asbestos Dust, Brit. M. J. 2: 147 (July 26) 1924.
2. Cooke, W. E.: Pulmonary Asbestosis, Brit. M. J. 2: 1024 (Dec. 3) 1927.
3. McDonald, S.: Histology of Pulmonary Asbestosis, Brit. M. J. 2: 1025 (Dec. 3) 1927.
4. Simson, F. W.: Pulmonary Asbestosis in South Africa, Brit. M. J. 1: 885 (May 26) 1928.

a gunshot wound. This was a Negro man who, at the time of his death, was a worker in an asbestos mill, having done such work for a total of twenty-eight months during a period of about three years. At the autopsy there was nothing of significance beyond the gunshot wounds of the chest and abdomen. In microscopic examination of the tissues, however, the peculiar bodies under consideration here were found in the sec-

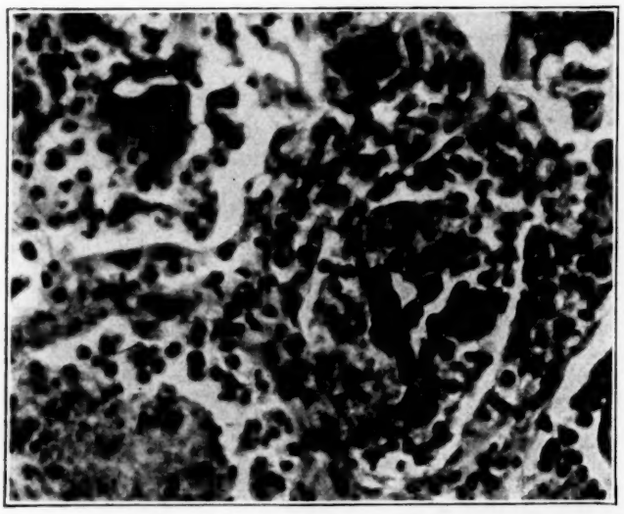


Fig. 3.—Asbestosis bodies in lung with phagocytes and black granular pigment within alveoli in pneumonia; reduced from a photomicrograph with a magnification of 475 diameters.

tions from both lungs, in alveoli, associated with fine black granular pigment and mononuclear cells, some being intimately associated with large mononuclear phagocytes, in the bronchioles, where there was also the black granular material and some mononuclears, in the alveolar walls, which were thickened, and within the connective tissues of the interlobular areas along the course of vessels and bronchi. Here there was a definite increase of fibrous tissue and much accumulation of black granular pigment.

At about the same time occurred another autopsy on a Negro man who was working in an asbestos mill at the time of development of lobar pneumonia from which he died. He had been in this occupation almost continuously for a period of four and one-half years. In this case, also, it was in the microscopic study of the tissues from the autopsy that the asbestosis was discovered, gross examination revealing only massive pneumonia of the whole right lung and upper left lobe.

Sections of all parts of the lungs from this case revealed the "asbestosis" bodies. There were great numbers of them in the alveoli, the walls of the alveoli, the deeper pleural tissues, the bronchi and the interlobular framework tissues, and they even occurred in thrombi of veins and in the peribronchial lymph nodes. Associated with them was much black granular pigment, in the alveoli, interstitial tissues and lymph nodes, and in these nodes was also a heavy deposit of yellow-brown granular substance of the same color as the asbestosis bodies. Mononuclear and polynuclear giant cell phagocytes were prominent in intimate connection with the asbestosis bodies in the alveoli, bronchi and veins. They contained much of the black granular material in the alveoli and bronchi, also. In the walls of the alveoli and bronchi and in the framework structures where these bodies lay was a cellular increase in fibrous tissue.

The peculiar bodies in the lungs of these two patients were first suspected of being mycelia and spores of a fungus, possibly *Aspergillus*. On investigation of the subjects and after we had learned of their occupation, the reports of McDonald and Simson were encountered and identification with the objects observed by them was established.

It then occurred to mind that these bodies should be found in the sputum of such patients, since they occurred in considerable numbers in the alveoli and bronchi, and that sputum examination might prove to be an important measure in the diagnosis of asbestosis. Consequently search was made for them in sputum of asbestos workers from the clientele of one of us (W. A. S.) Specimens of sputum were examined by direct wet smear preparation and by examining the concentrated sediment of sputum after digesting it in 10 per cent sodium hydroxide solution, kept warmed to about 80 C. until the mucus was well digested and the mixture watery.

The first sputum examined came from a man who by clinical and roentgen examination had active fibrocaseous tuberculosis and also a moderate grade of pneumonoconiosis. He had not worked in asbestos for approximately a year but had been previously so occupied for about ten years. The sputum contained great numbers of tubercle bacilli. Asbestosis bodies were readily found in direct wet slide preparations and in large numbers in the sodium hydroxide digest concentrate.

It was at this point that it came to attention that such sputum tests had already been made. In 1929 Stewart and Haddow,[5] and in 1930 Wood and Gloyne,[6] showed that they could be found by digesting the sputum with equal parts of concentrated antiformin and examining the centrifugated deposit. Subsequently we have found the asbestosis bodies in the sputum of two other asbestos workers and have failed to find them in one.

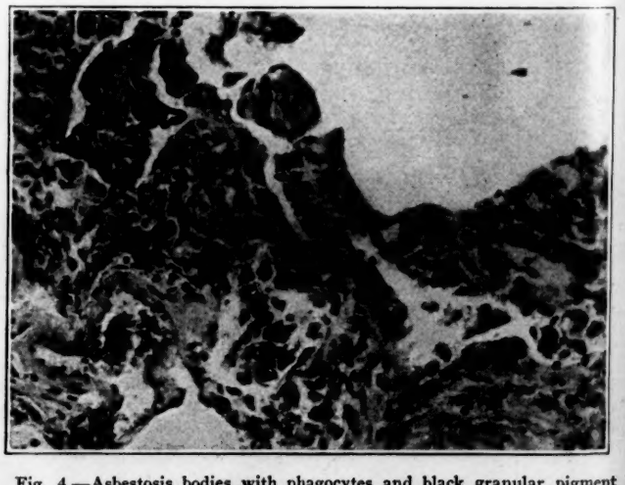


Fig. 4.—Asbestosis bodies with phagocytes and black granular pigment in fibrous lung; reduced from a photomicrograph with a magnification of 280 diameters.

The second patient was a Negro woman who had worked in an asbestos factory from 1918 to 1924 but not since. She had no evidence of pulmonary disease and was under treatment for syphilis. None of the asbestosis

5. Stewart, M. J., and Haddow, A. C.: Demonstration of the Peculiar Bodies ("Asbestosis Bodies") in Material Obtained by Lung Puncture and in the Sputum, J. Path. & Bact. **32**: 172 (Jan.) 1929.

6. Wood, W. B., and Gloyne, S. R.: Pulmonary Asbestosis, Lancet **1**: 445 (March 1) 1930.

bodies were found in direct unconcentrated wet preparation. In the sodium hydroxide digest concentrate they were sparse and were not as long as those found in the first case. The sputum was mucopurulent.

The third patient had not worked in asbestos for approximately two years. He was employed in an asbestos factory for seven months in 1924 and for about two years from 1926 to 1928. He had active fibrocaseous tuberculosis of the lungs, with tubercle bacilli in the sputum but no condition distinguishable as pneumonoconiosis. The first sputum was mucoid in character and insufficient for concentration. No asbestosis bodies were found in direct wet unconcentrated preparations. In this specimen were large numbers of dust cells, with fine black particles and numerous fine needle-like crystals. The second sputum was mucopurulent. A few asbestosis bodies were found in the sodium hydroxide digest concentrate but none in the unconcentrated preparations. These sparse bodies were usually small, but some were long and thick.

The fourth sputum examination was done in the case of a white man who had worked in an asbestos factory for about fourteen years but not since 1926. He had advanced fibrosis of the lungs, thought to be a late stage of pneumonoconiosis, without any evidence of tuberculosis, and was in a state of advancing cardiac failure. Examination of sputum on three separate occasions by both direct and concentrated preparation failed to reveal any asbestosis bodies.

It was anticipated that this case, on account of the length of exposure and the extent of pulmonary disease, should have the best opportunity of exhibiting these bodies, but this expectation has not been realized. The first patient had been exposed within about a year, and it showed by far the greatest number of asbestosis bodies in the sputum, but the other two patients had not been more recently exposed, one had not worked in asbestos for about five years, and neither of these two gave any distinguishable evidence of pneumonoconiosis.

It remains a subject for further study as to the relation of the occurrence and time of duration of these bodies in the sputum to the extent of exposure to asbestos dust, and as to the state or stage of asbestosis or other associated conditions in relation to their expulsion in the sputum.

The asbestosis bodies are quite variable in size, color and form but generally are of a characteristic structure. In the sputum, from which they may be better studied alone, they have a central filament of a transparent, slightly greenish tinged needle-like crystal. This is taken to be an asbestos crystal. On this filament is deposited, in varying quantity, nodules, blobs and segments of a homogeneous refractive substance, varying from a shining light yellow or greenish-yellow to a deep mahogony brown, depending on the thickness of the deposit. In general this deposit occurs more on the extremities, usually in a spherical blob here, tapering toward the middle of the filament, which may be bare, giving the appearance of two clubs or baseball bats placed small end to small end. Again there may be a ball of the deposit on the extremities and the shaft have a cylindric deposit of segments or disks of uniform or irregular size, giving the whole body the appearance of a dumb-bell. The clubbed form may break in the middle, leaving two indian-club forms. Again, the shaft and extremities may be the seat of more or less symmetrical deposits of globules, piled up, to give a variety of architectural figures. The segments or disks of deposit along the crystal filament may be pressed closely together or they may be separated by an interval at which the needle-like central crystal may be seen. Sometimes the shaft is covered by a homogeneous non-segmented deposit.

In the lungs they are of the same forms, but their full length may not be seen and they usually appear shorter. The size of the body varies widely in length and thickness, with the length of the filament and the amount and uniformity of the deposit. No extensive measurements have been made in this study, but in the lungs they have been measured from 12 to 100 microns long and from 1 to 12 thick, the shaft being narrower than the ends. In sputum they have been measured from 1 to 12 microns thick and up to 140 microns long.

Asbestosis bodies do not take the ordinary tissue and sputum dyes and they have been found in their natural form in one of these cases in slide preparations of sputum stained by the ordinary carbolfuchsin method for tubercle bacilli.

They may be stained on the slide by the prussian blue reaction for iron, the heavier and darker brown bodies taking a deep indigo blue, this shading to a lighter color in proportion to the heaviness and darkness of the yellow-brown substance. This reaction indicates a considerable iron content to the deposit. This iron has been thought to signify that the asbestosis body comes from the iron content of asbestos. Since the material is evidently a deposit within the lung on an asbestos crystal, this does not appear to be a satisfactory explanation. It is suggested that the iron content, if not the whole substance of the deposit, is of tissue origin, probably from the blood.

Clinical Notes, Suggestions and New Instruments

THE EXECUTION OF ROBERT H. WHITE BY HYDROCYANIC ACID GAS

EDWARD E. HAMER, M.D., CARSON CITY, NEV.
State Health Officer

Robert H. White was executed by hydrocyanic acid gas at the Nevada State Prison, June 2, 1930. A study of the heart and respiratory action was made at the time of the execution, a Bowles stethoscope being applied on the bare chest wall over the apex of the heart. The tube leading to the ear pieces on the outside of the prison wall was connected to the stethoscope while the prisoner was being strapped to the chair.

This was at 4:36 a. m. The heart action at that time was 108, strong and regular. The gas was started generating at 4:37½. At 4:38 the pulse rate was 120, regular and strong. A small inspiration was taken at 4:37¾, at which time the prisoner indicated that he smelled the gas. At 4:38 he took a very deep inspiration, turning his head toward the gas. He gave a spasmodic cough, his head fell forward, and he became unconscious. Following this first deep inspiration there was a complete stopping of the heart action for fifteen seconds. After that short period of time, or at 4:38½, the heart again began to beat in an irregular manner, continuing thus for fifteen seconds, when it became regular and strong. There was no apparent loss of power in the heart action. After this time, for two minutes the heart became slower, beating 100 times a minute at 4:41½ and eighty times a minute at 4:44. At 4:46½ the heart beats were distinctly regular but becoming very weak. The last heart beat was noted at 4:47.

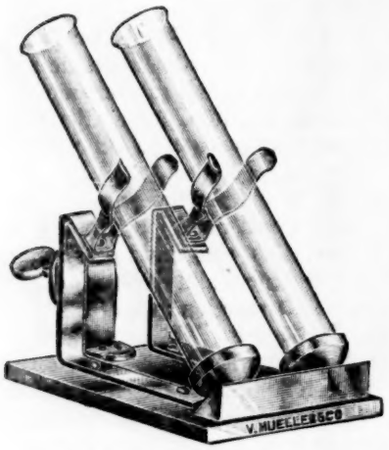
Respirations during this time after the first deep inspiration were convulsive and irregular.

There is no doubt that the prisoner was unconscious after the first deep inspiration. His head was thrown backward and remained in that position until after the fifth or sixth inspiration, or for two minutes, when it fell forward and there was no further movement of the head.

A NEW URINE COLLECTION TUBE HOLDER

EDWARD WILLIAM WHITE, M.D., CHICAGO

In this communication I am presenting to the profession a practical and inexpensive device to be used during the act of ureteral catheterization and separate urine collections.



Urine collection tube holder.

The holder is an especially designed stand or retort made of materials sufficiently strong to insure long life and frequent sterilization. The test tube clips are constructed of well tempered spring steel which will firmly grasp any size collecting container. A set screw is conveniently placed in order to fix the apparatus to the waste receptacle of the cytoscopic table, hence avoiding the danger of upsetting or contaminating the urine collection.

I have found after considerable experimentation that the new holder is indeed helpful and practical.

55 East Washington Street.

STRANGULATION OF LEFT LOBE OF LIVER

L. D. JOHNSON, M.D., CHANUTE, KAN.

O. C. P., a physician, aged 60, was taken with severe pain, April 23, 1929, following an attack of sneezing. The previous history was unimportant, except that the patient had had an appendectomy fifteen years before and had been in an automobile accident one year before, at which time he suffered injury to his head, causing a temporary unconsciousness, from which he recovered in a few hours. There was considerable soreness remaining under the upper abdominal regions afterward. The pain of April 23, was considered an attack of cholelithiasis; it required considerable morphine. The patient remained in bed. Morphine had to be repeated. The general condition was one of cholosis with cholelithiasis. On account of the general condition and a gradual increase in temperature, an exploratory incision was deemed advisable.

A right rectus incision was made. The abdomen was found filled with serum slightly bloody and the left lobe of the liver was found strangulated through a band of adhesions, which probably were congenital and were formed from the remains of the round ligament attached to the suspensory and falciform ligaments, with an attachment below to the upper part of the mesentery of the transverse colon. This band held a greatly discolored liver, which had all the appearances of an ordinary gangrenous condition. The bands were loosened. An attempt was made to find the gallbladder, which was not present, probably from a congenital condition. The abdomen was closed with a soft rubber drain, carried into the foramen of Winslow.

The patient made an uninterrupted recovery, with the exception of two chills on alternate days, with temperature running 104 and 104.5 F., respectively. At present he is in good condition and enjoying an active practice.

103 South Evergreen Street.

A NEW MASK THAT PROTECTS BOTH PHYSICIAN AND PATIENT

HERBERT V. MELLINGER, M.D., LOS ANGELES

Years ago when I was a student in medical school, it was announced that a research worker had discovered and proved that during conversation in an ordinary tone we throw a spray from which cultures can be taken at a distance of 8 feet, and that a cough or a sneeze throws a spray from which cultures can be taken at a distance of 40 feet. This information has always remained firmly and prominently fixed in my mind.

In 1917 at Fort Riley, Kansas, where there were many cases of air-borne disease, a particular idea occured to me. I used the materials which were there available, namely, a piece of stovepipe wire and a piece of newspaper, and made myself a protective mask. This mask in a crude form I have used frequently during all these years. It was not, however, until recently that I was able to develop from this something more efficient and also good looking.

The mask which I have devised consists of two parts. The mask support is a 14 carat gold filled wire, gold because it looks well, and filled in order to obtain the necessary springiness. Sterilization of the mask support is no more necessary than the sterilization of spectacles, but, if required, it may be done by any of the approved methods. A mask support will last as long as it is well treated.

The mask proper is of special paper, waxed on both sides. It is very resistant and, while not being truly transparent, it is very translucent. In a good light the features can be seen well through it, so that children are not at all disturbed. Its upper part is in intimate contact with the nose and cheeks. Its lower edge hangs free, but the danger of infection transmission is in the spray, which the mask stops. I believe that, under all ordinary circumstances, one may safely neglect the possibility of inhaling the few germs that may conceivably be traveling on particles of moisture or dirt in the atmosphere. We must breath to live, and it is fair to expect something from the resistive abilities of our bodies themselves.

It requires a little care and practice to place the mask properly on the mask support, and the two together on the face. It is

Fig. 1.—Mask support in accurate contact with contour of face.

Fig. 2.—Mask and mask support in position.

worth a few minutes' time to learn this technic, because when the mask is once properly applied to the face there is no tendency for it to become displaced or removed. Since its upper edge is in intimate contact with the face, the spectacles are never steamed. One can wear the mask for hours as comfortably as one wears spectacles. The wearer knows that his patient's wound is protected from his breath, and that his nose and throat are adequately protected from sprays or spurts from the patient. He can breath easily and can talk freely in perfect comfort and safety. When one is through with a case, the mask is destroyed.

The mask is useful to surgeons, nose and throat specialists, internists (examining chests), general practitioners (for they see the worst cases first), public health physicians, dentists,

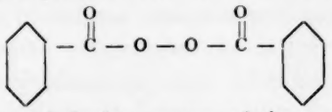
nurses, every attendant in a hospital for contagious diseases, every individual in a tuberculosis sanatorium, and every person who comes in contact with any other person who is afflicted with an air-borne disease.

412 West Sixth Street.

BENZOYL PEROXIDE IN THE TREATMENT OF POISON IVY INTOXICATION *

PAUL D. LAMSON, M.D., NASHVILLE, TENN.

Poison ivy and poison oak are said to produce their intoxication by means of toxicodendrol, which becomes inert when oxidized. Various oxidizing agents, such as ferric chloride and potassium permanganate, have been used with some success in the treatment of this intoxication. These substances are applied in solution and their action, especially that of the latter, is of very short duration. It seemed to me that if one could find a dusting powder with oxidizing properties which could be left in contact with the affected part, this would not only destroy any toxin on the surface of the skin but would absorb serum from breaking blisters and continue to act as a store of oxidizing material. Benzoyl peroxide seemed to have almost ideal properties for such a dusting powder. Its pharmacologic properties have been described by Loevenhart [1] as follows: It is a white crystalline, nondeliquescent substance with the formula



It is extremely nonirritating, watery solutions causing no irritation when dropped in the eye, and even the pure crystalline substance causing no irritation or disturbance of any kind when placed in the peritoneal cavity. It is also nontoxic when taken by mouth, being reduced to benzoic acid and excreted as hippuric acid. Saturated water solutions have been given intravenously without toxic effects. It has a definite antiseptic action and has been used as a dusting powder in wounds. Finally, as well as being an active oxidizing agent, it has a definite local anesthetic action which is ideal in reducing the intense itching of poison ivy. This substance has therefore the properties of an ideal dusting powder for this particular condition and no contraindications of which I am aware. It has been tried in thirty or more cases of ivy poisoning with the following results:

When benzoyl peroxide powder is dusted well over the lesion and kept in place by a light bandage, itching disappears in a short time, fifteen or twenty minutes, and may remain absent for as much as eight or ten hours after a single application. One or two physicians and nurses who have suffered great annoyance from itching in yearly attacks of poison ivy have stated that the effect was remarkable; that within half an hour after the application of the powder they became entirely unconscious of the lesions. Several of these cases which were seen early dried up and entirely disappeared within a day or so without spreading. In one boys' camp, where at the first part of the year boys were often confined to bed with very severe poison ivy lesions, it was found that after benzoyl peroxide was used no serious cases developed. The boys were so convinced of its beneficial action that they came in for treatment early, and after application of the powder no spreading of the lesions occurred.

On account of the varied lesions seen in poison ivy intoxication one would not expect this substance to be a certain cure in all cases. In many instances the lesion is a deep, small, hard blister, forming well under the skin which the powder could not be expected to reach. Other patients have a general anaphylactic action with intense edema, but many simple cases have only a localized patch of superficial blisters, which itch intensely and break on scratching, thus allowing the poison to spread all over the body. It is hoped that in such cases the application of this benzoyl peroxide powder may at least give relief from the annoyance of itching, reduce the spread of the intoxication, and possibly shorten its course.

Benzoyl peroxide can be obtained from various chemical manufacturers; it usually comes in granular lumps. For convenience of those who might wish to use it, Parke, Davis and Company have kindly prepared a pure, finely powdered benzoyl peroxide (undiluted with other substances) which can be dusted directly on the lesion.

CONCLUSIONS

Benzoyl peroxide is a nonirritating, slightly antiseptic, definitely analgesic, nondeliquescent powder having active oxidizing properties. It is theoretically an almost ideal dusting powder for poison ivy intoxication, and has been shown in a small group of cases to reduce itching, to stop the spread of the intoxication, and possibly to shorten its duration.

* From the Department of Pharmacology Vanderbilt University School of Medicine.

1. Loevenhart, A. S.: Therap. Monatsh. **19**: 426-428, 1905.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, Secretary.

WHITE'S COD LIVER OIL CONCENTRATE.—A cod liver oil concentrate in the form of tablets (wafers), each containing not less than 250 vitamin A units and not less than 100 vitamin D units.

Actions and Uses.—White's cod liver oil concentrate possesses properties similar to those of cod liver oil so far as these depend on the fat soluble vitamin content of the latter.

Dosage.—For adults, two to four tablets (wafers) three times daily; for children over 5 years, one tablet (wafer) three times daily, after each meal; for infants, one tablet (wafer) daily, crushed and dissolved in the feeding.

Manufactured by the Health Products Corporation, Newark, N. J. (White Laboratories, Inc., Gloucester, Mass., distributor). No U. S. patent or trademark.

White's cod liver oil concentrate is obtained from cod liver oil by concentration of the unsaponifiable fraction of the latter. The vitamin A potency of White's cod liver oil concentrate is determined by a modification of the U. S. P. X method, differing from the latter in the use of a stock ration containing agar, irradiated yeast, and "crisco," with starch replacing dextrin, and in the use of the appearance of xerophthalmia as the criterion for beginning the feeding of the ration; when assayed by this method the product is required to have not less than 250 vitamin A units per tablet. Comparative assays using the preceding method and that of the U. S. P. X have shown that the potency as determined by this method is fully the equivalent of that determined by the pharmacopeial method. The vitamin D potency is determined by comparison with a potent cod liver oil containing in each 0.75 Gm. 1 rat unit of vitamin D, the rat unit being defined as that amount of vitamin D which, when uniformly distributed into a standard vitamin D deficient diet—ration 2965, *J. Biol. Chem.* **64**: 263, 1925—will produce in the metaphyses of the distal ends of the radii and ulnae of standard rachitic rats a narrow and continuous line of calcium deposits; when assayed by this method the product is required to have 100 vitamin D units.

Current Trends in Anatomy.—The history of a science never reaches the word finis: the work of discovery continues, each new stage growing out of the past without barrier of time or circumstance. Investigation may change its direction but does not cease. At the present time we are in the midst of an important change in anatomical research and teaching, due to the extraordinary enrichment of growth of other sciences, coming at a time when the original task of the anatomist has been completed. Practically all the information to be gained by the old basic method of the science, dissection of the human body, was in hand about a hundred years ago. There is very little gross anatomy in current textbooks that was not in those of Charles Bell, Henle or Sappey. For this reason the investigators have moved on to other fields. Many anatomists of the dissector-draughtsman type, with their interest centered in form and pattern, who would have been the great dissectors and topographers in past centuries, are today anthropometrists, working by anatomical methods at problems of race, heredity and variation.—Corner, G. W.: Clio Medico—Anatomy, New York, Paul B. Hoeber, Inc., 1930.

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SATURDAY, AUGUST 30, 1930

ANOTHER GAS HAZARD

The American people are beginning to be protected so far as concerns the food they take into their stomachs. They have only inadequate protection of the air they take into their lungs. Under the federal Food and Drugs Act, a bureau of the United States government is charged with the duty of excluding from interstate commerce foodstuffs that are spoiled, adulterated, or preserved with toxic substances. The government gives little or no similar protection with regard to materials and articles in interstate trade that may be harmful or fatal when their fumes are inhaled.

The Committee on Toxic Gases, appointed by the American Medical Association a year ago, has already published reports on the hazards of carbon monoxide [1] from city gas and automobile exhaust and on the hazards of the gases used in household refrigeration.[2] The most significant feature, particularly of the latter report, is that the information which has now been gained at the cost of many human lives could and should have been obtained by laboratory experiments on animals. Even when such knowledge is available, it is not self-enforcing. Governmental supervision and enforcement of laws and ordinances are necessary, if the public is to be protected from its own ignorance of such technical matters. This need is emphasized by a new, or greatly increased, gas hazard to which, according to reports, the public is to be exposed during the coming winter.

Methanol, or methyl alcohol, was until recently produced by the destructive distillation of wood. It is now manufactured from water gas and hydrogen ($CO+H_2+H_2=CH_4O$) at a cost which makes possible a large production at a low price. One of the uses for which methanol is well adapted in all respects, except one, is in the antifreeze mixture in automobile radiators. This unfortunate exception to its good qualities consists in the fact that methanol is a volatile cumulative poison. When taken in frequently repeated small doses, methanol induces blindness; in larger doses, whether by the stomach or by the lungs, it may cause death.

As the coefficient of distribution of methanol [3] between water, or blood, and air is high, by far the greater part of any quantity of methanol that reaches the lungs is absorbed. Unlike ethyl alcohol, methanol is not burned in the body to any considerable degree; and its excretion through the breath and the urine is extremely slow. The toxic dose is not large and is easily reached even when the amount absorbed daily is too small to induce a noticeable initial effect. Contrary to the claims that would minimize its dangers, methanol is quite as poisonous when inhaled into the lungs as when taken into the stomach. Erroneous also is the assertion that, as the synthetic product is almost pure methanol, it is less toxic than the somewhat impure product obtained by the older method of manufacture.[4] The fact is that in any preparation of methanol, pure or impure, the chief toxic substance is the methanol itself.

If, as now seems probable, methanol is widely sold for use in automobiles during the coming winter, and if precautions and warning in regard to the dangers of inhaling its fumes from heated automobile radiators are not instituted, it is highly probable that many cases of blindness will result, and probably also fatalities.[5]

1. Henderson, Yandell: The Dangers of Carbon Monoxide Poisoning and Measures to Lessen These Dangers: Report 1 of the Committee on Poisonous Gases of the American Medical Association, J. A. M. A. **94**: 179 (Jan. 18) 1930.

2. McCord, C. P.: Household Mechanical Refrigeration, with Special Reference to the Toxicity of the Refrigerants Utilized: Report 2 of the Committee on Poisonous Gases of the American Medical Association, J. A. M. A. **94**: 1832 (June 7) 1930.

3. Henderson, Yandell; and Haggard, H. W.: Noxious Gases, American Chemical Society Monograph Series, 1927, pp. 166-168.

4. Hunt, Reid: Synthetic Methanol is Poisonous, J. Indust. & Engin. Chem. **17**: 763 (July) 1925; Congressional Record, June 5, 1930.

5. Voegtlin, Carl: Memorandum in reply to a letter by Hon. Grant M. Hudson, Member of Congress, concerning synthetic methanol, Congressional Record, June 5, 1930.

6. McKinley, E. B.: Filtrable Virus and Rickettsia Diseases, Monograph 27, Bureau of Science, Manila, Philippine Islands, 1929, chapter 5, p. 152.

SUSCEPTIBILITY TO SCARLET FEVER

For some thus far unexplained reason, scarlet fever is comparatively rare in the tropics. The disease has been repeatedly introduced into India, South America and the Philippines. Invariably only a local epidemic has resulted, largely confined to newly arrived foreigners and with few cases developing among the native population. Mass immunization of native tropical races by other infections or environmental factors of similar or overlapping specificities has been suggested in explanation of this phenomenon though thus far unsupported by experimental evidence. It has also been suggested that metabolic peculiarities of the tropics are concerned. In a recent monograph sponsored by the Bureau of Science, Manila, Dr. E. B. McKinley [6] assumes that, owing to the low carbon consumption necessary to maintain body heat in the tropics, the metabolism of fats "differs from [that of] temperate climates, fatty acids becom[ing] available for . . . the neutralizing of bacterial toxins." He quotes in

support of his hypothesis the well known fact that in the test tube certain lipoids neutralize bacterial toxins, including the toxin formed by the hemolytic streptococcus.

Although Dr. McKinley emphasizes the fact that his postulated protective tropical lipacidosis is nothing more than a speculative hypothesis, experimental evidence recently reported by Drs. Kligler and Geiger [7] of the Department of Hygiene, Hebrew University, Jerusalem, indicates that tropical variations in fat metabolism do have effects on bodily resistance. In their studies of effects of external temperature on the metabolism of vegetable oils, these investigators made a parallel study of changes in nonspecific immunity. They report that, with rats kept at usual temperatures (from 17 to 20 C., or 62.6 to 68 F.) quantitative variations in fat intake cause relatively little differences in body weight, while at tropical temperatures (from 28 to 30 C., or 82.4 to 86 F.) the same variation in fat intake cause marked variations in growth curves, with parallel variations in resistance to experimental trypanosomiasis.

Suggestive evidence in favor of a third conceivable explanation of tropical insusceptibility to scarlet fever is contained in recent papers by Dr. Yoyoda and his co-workers [8] at the Japanese Isolation Hospital, Dairen, Manchuria. These Japanese scientists compared the relative susceptibility of the native Chinese and Japanese of their provinces to the Dick toxin, with a parallel statistical study of relative scarlet fever morbidity. Cutaneous pigmentation, social customs and relations, climatic conditions and other environmental factors are presumably identical in the two race groups. Of 11,000 healthy Japanese thus far tested by them, 37.3 per cent were Dick positive, practically the same percentage as that reported by Zingher for New York and by Bókay for Budapest. With the 3,500 local Chinese thus far tested, only half of this percentage, or 19.4 per cent, were Dick susceptible. Statistics gathered over a period of six consecutive years showed that the average annual scarlet fever morbidity among the Japanese was 361 per hundred thousand, as contrasted with 8 per hundred thousand among the Chinese. Dr. Yoyoda's data suggest that tropical insusceptibility to scarlet fever is not due to climatic adjustments or mass immunization but is largely the result of some unknown hereditary factor, conceivably due to ancestral weeding out of susceptible human strains.

An interesting by-product of Dr. Yoyoda's research is his demonstration that, while the local Chinese have half the percentage susceptibility of the Japanese to the Dick toxin, they show but one forty-fifth the Japanese percentage morbidity to scarlet fever. Clinicians who postulate that scarlet fever is a symptom complex due to mixed or concurrent infection with certain streptococci and an unknown filtrable virus will read confirmatory evidence in support of their hypothesis in these data. Evidently some factor other than Dick toxin resistance is involved in local Chinese insusceptibility.

7. Kligler, I. J., and Geiger, A.: Relation of Temperature to Nutrition and Resistance. Proc. Soc. Exper. Biol. & Med. **27**: 793 (May) 1930.
8. Yoyoda, Taro; Moriwaki, Joji; and Futagi, Yasuo: Does the Dick Reaction with Streptococcus Toxin Indicate Susceptibility to Scarlet Fever? J. Infect. Dis. **46**: 186 (March) 1930.

LABRADOR—A LESSON IN PRACTICAL NUTRITION

In countries or communities where foods are always available, not only in satisfying quantities but also in considerable variety, it is often difficult to develop a popular interest or even professional concern in the possibility of so-called dietary deficiency disorders. There is always a wholesome lesson, therefore, in the records of lands where milk and honey fail to flow in abundance and where the fruits of the land are few. At the request of Sir Wilfred Grenfell, Dr. Helen S. Mitchell of Battle Creek College undertook a nutritional survey during the summer of 1929 among the fisher folk of Labrador and northern Newfoundland. It is a region in which the widespread occurrence of night-blindness, beriberi, rickets, mild scurvy and general undernutrition have long been recognized but still exist. These facts of themselves suggest an opportunity for the nutritionist.

According to Mitchell's report,[1] the possibility of securing worth-while data under the conditions of living that prevail in those faraway communities out of frequent contact with more populous regions is unexpectedly favorable. Thus, she writes:

> Aside from fish, game, and a minimum of edible vegetation, all of the food supplies must be obtained from the traders in barter for the season's catch of fish—a far more common medium of exchange than currency. While trading posts in the larger villages make possible the retail purchase of a few supplies, the prevailing custom is to obtain a twelve months' food supply each fall. Thus I found most of the women able to speedily tell me just how many barrels of flour, gallons of molasses, pounds of oleo, etc., her family consumed in a year. It would be rare indeed to find this sort of information so easily available in our communities.

In those settlements where there are few, if any, gardens, no cattle, goats, sheep or hens, the situation is by far the worst. A barrel of white flour for each adult annually, molasses, salt pork, salt beef, butterine or oleomargarine, a few beans and peas, a good supply of salt codfish, and a generous amount of tea, is the variety provided by most of these families. The more prosperous and thrifty ones may buy or raise potatoes, turnips and cabbage, but frequently only enough to last for a small fraction of the winter. When the statistics were evaluated for a region in which there are no cattle and only a few small gardens, the results presented the following averages for a person for a day: energy, 2,610 calories; proteins, 104 Gm.; carbohydrates, 457 Gm.; fats, 43 Gm.; calcium, 0.42 Gm.; phosphorus, 2.1 Gm.; iron, 0.019 Gm. Several features are at once

1. Mitchell, Helen S.: Nutrition Survey in Labrador and Northern Newfoundland, J. A. Dietet. A. **6**: 29 (June) 1930.

apparent from such a quantitative summary. There cannot be any marked shortage of food fuel. The protein, fat and carbohydrate were in reasonable proportion, starches predominating over sugars, as a result of the extensive use of white flour. The nutritive shortages, Mitchell points out further, were chiefly evident among the minerals and vitamins. Phosphorus was usually adequate, because of the large consumption of fish and flour; but the calcium was extremely low for the same reason, thus throwing the calcium-phosphorus balance so far off as theoretically to predispose every child on such a diet to serious bone and tooth defects. Mitchell reports that many of the children showed jaws full of hopelessly decayed and broken teeth. Iron was surprisingly adequate in many cases, owing to the meat and large quantities of molasses consumed, but fell below the standard allowance level of 15 mg. a day when sugar was substituted for molasses—a common practice paralleling a degree of prosperity. It requires little insight to see the advantage of corrective foods in such communities. The supply of vitamins is obviously low as judged by present American standards; at any rate, many of the common vitamin-bearing foods become the exception rather than the rule in Labrador. Opportunity beckons there in the fields of sanitation, economics and practical dietetics.

VARIATIONS IN BLOOD PRESSURE

Blood pressure presents a phenomenon that engages the attention of the physician in connection with a large number of his patients. He no longer depends, in the majority of instances, on that skilful *tactus eruditus* which supplied the helpful information regarding arterial tension that was sought by the practitioners of an earlier generation. The loss of skill in the unaided examination of the superficial arteries by the present generation of clinicians has been decried by more than one writer on current diagnostic procedure. Nevertheless the measurement of the pressure of blood in the arteries by means of instruments of precision has become a part of the present-day physician's routine of examination of patients. He acts on the evidence that it affords in making his judgments as to treatment or the management of disease. One may question whether the data secured with the manometer are often as accurate or informative as they should be; indeed, it is even more doubtful whether they are always interpreted with adequate scrutiny. The momentary blood pressure of man may vary widely between different persons, even when age, sex and activity are taken into consideration. What shall be the criteria of normality? A recent writer has remarked that, as so often happens in medicine, when physicians first discovered hypertension they immediately devoted all their efforts to curing it, and only gradually and after many years did they become curious enough to undertake such studies as would enable them to determine when a given pressure represents disease and when it is only a physiologic variation from the average. Only recently a writer [1] described how the symptoms of essential hypertension in a series of unselected hypertensive patients were definitely improved in a large proportion of the persons involved by an admittedly nonspecific treatment—the daily administration of a few drops of dilute hydrochloric acid. He insists that the symptoms associated with uncomplicated essential hypertension may frequently be relieved by the suggestion inherent in any seriously and enthusiastically prescribed drug or method of therapy.

In the case of body temperature, a long experience with carefully conducted measurements has made the "normal" or physiologic figure quite dependable for the determination of indications of ill health. Even in the case of temperature there are diurnal variations and other self-correcting deviations from the conventional 98.4 F. that always need to be taken into account. Shall one be satisfied with the dictum that 120 mm. of mercury is the "normal" arterial pressure with deviations, let us say, between 100 and 140 mm. as tolerable under the designation of physiologic? There is no dearth of statistics for the establishment of assumed criteria. Most of the data have been secured from what might be called selected groups—students in educational institutions, candidates for life insurance representing a preponderance of "accepted risks," and similar aggregations that are not entirely representative of our population at random. On this account Alvarez and Stanley [2] express special dependence on the measurements that they have completed on the population of a large state prison. The investigators point out that here there is no selection along physical lines; and there is no reason to assume (as was formerly supposed) that the physical measurements of prisoners are different from those of their brethren outside the walls. At any rate, care was taken to avoid the errors of technic, nervous perturbations, and the like that might render the observations undependable. The persons examined were numerous and in general showed little interest in the proceeding. This is obviously of importance when blood pressure is concerned.

The principal revelation of the study by Alvarez and Stanley was the discovery that the modal blood pressure, that is, the commonest or most typical arterial tension, varies little from youth to old age. In the prisoners it was about 115 mm. of mercury. This is lower, the observers say, than the figure usually found for men out in the world. The reason, they add, may be that the prisoners are not fatigued and worried by the struggle to make a living; to a certain extent their pressures are basal. Mean pressure does not increase

1. Ayman, David: An Evaluation of Therapeutic Results in Essential Hypertension: I. The Interpretation of Symptomatic Relief, J. A. M. A. **95**: 246 (July 26) 1930.

2. Alvarez, W. C., and Stanley, L. L.: Blood Pressure in Six Thousand Prisoners and Four Hundred Guards: A Statistical Analysis, Arch. Int. Med. **46**: 17 (July) 1930.

until after 40 years of age. In the years from 20 to 40 the percentage of men with tensions higher than 140 mm. remain almost constant, suggesting that all who have hypertension at the age of 40 had it at the age of 20. Perhaps it may be assumed that a pressure of 115 mm. is just as normal and a pressure of 140 mm. just as abnormal in an old man as in a young one. Modal diastolic pressure is 68 mm. in the younger men and 73 mm. in the older ones. Pulse pressure decreases during the fourth decade of life.

Contrary to the general impression, thickset, stocky men are apparently no more likely to develop hypertension than are their tall, thin, asthenic-looking brethren. If one may depend on the measurements of Alvarez and Stanley, the level of pressure in most persons does not rise even in old age. These observers have been impressed with the fact that the level of blood pressure seems to be little affected by such factors as dissipation, the use of alcohol and drugs, or even by so chronic an infection as syphilis. It appears to be modified largely by heredity, they conclude; and it certainly is affected by nervous strain, excitement, the day's work, the amount of fat in the body and the temperature of the environment.

Current Comment

ANTISEPSIS DURING LABOR

The importance of maintaining as nearly as possible asepsis in the vagina during parturition as a means of combating puerperal infection has been repeatedly emphasized.[1] The sterilization of the genital tract immediately before and during parturition may be considered a means properly employed to the same end. Cleansing of the vulva with green soap and the application of antiseptics to the vulva and to the perineum have long been common practice. Four years ago, Mayes [2] suggested a technic which included, besides sterilization of the thighs, perineum and vulva, the introduction of 4 cc. of a 4 per cent solution of mercurochrome-220 soluble high into the vagina, the antiseptic being worked thoroughly into the folds of the vagina and around the cervix and presenting part. In the hands of its originator, this method reduced puerperal morbidity by as much as 50 per cent. Other obstetricians, among them Williams at Johns Hopkins and Baldwin at the University of Michigan, failed to obtain any striking results. Two recent papers, however, lend enthusiastic support to the method suggested by Mayes. Bessesen,[3] though he gives no statistics, says that his results have been as good as those of Mayes himself. Henderson [4] reports a series of 100 cases treated by the Mayes technic (except for the spraying of the thighs) and a second series of 100 control cases treated without vaginal sterilization but otherwise receiving exactly the same care. The maternal morbidity, any patient whose temperature reaches 100.4 F. on two successive days being considered a case of maternal morbidity, was 50 per cent higher in the second series than in the first. Although the numbers in this study from the University of Colorado are not large, the care with which the experiment has been controlled gives significance to the result.

1. Factors in Puerperal Sepsis, Current Comment, J. A. M. A. **94**: 1071 (April 5) 1930.
2. Mayes, H. W.: Morbidity in Obstetrics — Its Reduction by the Use of Mercurochrome as a Vaginal Antiseptic, New York State J. Med. **26**: 384 (May 1) 1926.
3. Bessesen, D. H.: Vaginal Sterilization, Minnesota Med. **13**: 318 (May) 1930.
4. Henderson, H. B.: Mercurochrome as an Antiseptic During Labor, Colorado Med. **27**: 184 (June) 1930.

COCCIDIOIDAL GRANULOMA

The original work of Rixford and Gilchrist [1] and of Moffit and Ophüls [2] in 1896 and 1900 focused attention on this interesting malady, long popularly characterized in California as "San Joaquin Valley disease." The statistics of the California State Department of Public Health [3] indicate the geographic limitation to be decidedly unwarranted. Some 218 cases have been reported in at least 23 counties in California. That the disease is not confined to man was shown recently by Beck,[4] who in the course of an epidemiologic investigation in Kern County, California, examined 38 specimens from slaughtered animals of which 7, or 18.4 per cent, were found positive. Six of these were from cattle and one from sheep. The lesions were stated to be localized in the upper respiratory tract. History of a common factor was not obtainable and a wide geographic distribution was noted. The portals of entry of the infection are the skin and the lungs, and many cases may be wrongly diagnosed as tuberculosis, to which disease coccidioidal granuloma bears a close resemblance in its onset, clinical course and pathologic changes. The causative factor in the epidemiology yet remains obscure and is a fertile field for investigation. Cummins and his co-workers [5] point out that 80 per cent of the infection has been acquired in California, yet a number of other states have reported cases. These data apparently indicate some causative factor in the soil or closely allied thereto and not contact. The concentration of work along this line is imperative and should yield fruitful results, particularly as to the manner the organism, *Coccidioides immitis,* may become present in soil and the technical procedures necessary to prove such an hypothesis. Perhaps an intensive study of the disease in animals may be helpful.

1. Rixford and Gilchrist: Johns Hopkins Hosp. Rep., 1896.
2. Ophüls and Moffit: Philadelphia M. J., 1900.
3. Weekly Bull., California State Dept. of Pub. Health, March 1, 1930.
4. Beck: Weekly Bull., California State Dept. of Pub. Health, May 4, 1929.
5. Cummins, W. T.; Smith, J. K., and Halliday, C. H.: Coccidioidal Granuloma, J. A. M. A. **93**: 1046 (Oct. 5) 1929.

THE HOSTS OF TULAREMIA

Tularemia is principally a disease of wild life. In conserving wild life are we in danger of enlarging the reservoir of infection from which human cases are derived? The suggestion was made recently by Dr. R. G. Green [6] of the University of Minnesota. He points out that with a single exception all recorded human cases appear to have been derived from infected

6. Green, R. G.: Tularemia in Wild Life and Its Transmission to Man, Journal-Lancet **50**: 241 (June) 1930.

animals or intermediate insect hosts. Infection is not passed ordinarily from man to man even when special precautions are not taken to avoid it. Dr. Green suggests that the frequency of human infection is probably a cyclic phenomenon depending on exacerbations of the disease in the animal reservoir. Until some means of combating the disease at this point is discovered, as for example the destruction of the deer fly and the ticks that act as intermediate hosts, the conservation of wild life is liable to extend the incidence of the disease in man.

Association News

MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts at 10 a. m. on Monday, Tuesday and Saturday, and at 9:45 on Thursday, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week is as follows:

September 2. The Great Imitator.
September 4. Protecting the Surface.
September 6. Beware of the Poison Oak.

Five minute health talks may be heard over the Columbia Broadcasting System daily from 1 to 1:05 p. m., daylight saving time.

The program for the week is as follows:

September 2. But He Must Go to School.
September 3. Expanding Health Horizons.
September 4. Serve Yourself Sufficient Sleep.
September 5. Too Much Acid.
September 6. Shall We Eat Meat?

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Society News.—The Northwest Alabama Medical Society, Berry, July 29, was addressed by Dr. Robert B. Garlington, Brilliant, on gastric ulcer.——The Northeastern Division of the Alabama State Medical Association held a program at Huntsville, June 24; addresses were made on fractures of the hip, duodenal ulcer, and puerperal infection and treatment by Drs. Duncan Eve, Jr., Jack Witherspoon and Samuel C. Cowan, Nashville, Tenn., respectively.——The Walker County Medical Society was addressed, August 8, at Jasper by Drs. David H. Wright, Berry, on medical ethics, and Price Clayton, Bankhead, on postpartum hemorrhage.

ILLINOIS

Society News.—Dr. Edmund Andrews, Chicago, will address the Alexander County Medical Society at Cairo, September 19, on "Diagnosis and Treatment of Gallbladder Diseases."——Dr. Walter R. Fischer, Chicago, addressed the McHenry County Medical Society, August 5, on "Foot Deformities—Etiology, Prevention and Treatment."——The Christian County Medical Society was addressed, July 17, by Dr. Thomas O. Freeman, Mattoon, on "Acute Surgical Conditions of the Abdomen."——The Franklin County Medical Society was addressed recently by Drs. Clark E. Baker, Marion, and William G. Parker, Mount Vernon, on "The Chemistry of Metabolism" and "Some Aspects of Allergy," respectively.

Chicago

Symposium on Crime Detection.—The Scientific Crime Detection Laboratory in connection with Northwestern University held a symposium on crime detection, August 27-30. Among the speakers was Dr. Herman N. Bundesen, county coroner; A. J. Pacini spoke on "Use of Ultraviolet Light in Crime Detection"; Clarence W. Muehlberger, Ph.D., "Application of Chemistry in Crime Detection," and Col. Calvin H. Goddard, "Scientific Methods for the Detection of Crime" and "The Identification of Guns and Bullets."

Rongetti Sentenced to Imprisonment.—Dr. Amante Rongetti was sentenced, August 12, to imprisonment from one to fourteen years for manslaughter on a charge of causing a death through an illegal operation. In his first trial Rongetti was sentenced to death. When the supreme court granted a new trial, he was found guilty of manslaughter. This verdict was set aside and the third trial followed. A stay of sixty days was obtained for Rongetti in order to perfect an appeal to the supreme court. He is at liberty under $25,000 bond.

INDIANA

Personal.—Dr. Lindley H. Eshleman has been appointed city health officer of Marion.——Dr. Charles B. McGlumphy, professor of pathology and bacteriology at the University of North Dakota School of Medicine, Grand Forks, recently assumed his duties as full-time pathologist at the Deaconess Hospital, Evansville.

Hospital News.—The executive committee of the James Whitcomb Riley Hospital for Children will soon begin the expenditure of a fund of about $1,000, known as the Bobby Jones Fund, which was raised at two exhibition golf games played by Jones in 1926. The fund will be expended on the playground of the hospital.

Society News.—The Porter County Medical Society was addressed recently at Valparaiso by Dr. Gerald H. Stoner, Valparaiso, on "Pasteur: Man's Greatest Benefactor."——The Clay County Medical Society at its forty-seventh annual meeting was addressed by Drs. William D. Asbury, Terre Haute, one of the four surviving charter members of the society, on "Half Century of Hoosier Medicine," and Garland D. Scott, Sullivan, "Original Research Experiments on Hydronephrosis."

KANSAS

Society News.—The Dickinson County Medical Society was addressed at Hope, July 17, by Drs. Otto J. Dixon, Kansas City, Mo., on "Fatal Infections Following Tonsillitis," and Lyle S. Powell, Lawrence, "History of Spectacles," illustrated.——The Franklin County Medical Society met, June 25, at the State Hospital, Osawatomie. The hospital staff furnished the program; thirty-four physicians were present.

MICHIGAN

Dr. Vanderlaan Honored.—A testimonial dinner was recently given in honor of Dr. John Vanderlaan, Muskegon, by eighty of his fellows, commemorating his fiftieth year of service in public life. Dr. Frank W. Garber, Sr., chief of staff Hackley Hospital, an office that was first held by Dr. Vanderlaan, presided.

Personal.—Dr. Charles J. Scavarda has been appointed assistant health officer in charge of the health division of the public welfare department at Flint at a salary of $5,000.——Dr. Frank L. S. Reynolds has been appointed superintendent of the Grand View Hospital, Ironwood, succeeding Dr. Walter Reineking, who resigned to accept the superintendency of the Madison, Wis., County Sanatorium.

Licenses Revoked.—The Michigan State Board of Registration in Medicine announces that on August 11 the licenses of the following were revoked:

Dr. George A. Fritch, who is completing a term in Michigan State prison, Jackson, for manslaughter in connection with an illegal operation.
Dr. John J. George, Detroit, for associating with the "Michigan Research Clinic" (the Tilton Cancer cure outfit).
Dr. Greenbury W. Hilton, Grand Rapids, for associating with the "Toneal Health Station" and medicine shows.

State Medical Meeting at Benton Harbor, September 15-17.—The one hundred and tenth annual meeting of the Michigan State Medical Society will be held at Benton Harbor, September 15-17, under the presidency of Dr. Jacob D. Brook, Grandville. Papers are scheduled to be given, among others, by Dr. Edward Starr Judd, Rochester, Minn., President-Elect of the American Medical Association, on surgical management; Dr. George W. Crile, Cleveland, "Cause and Control of Gastric Acidity"; Dr. Plinn F. Morse, Detroit, "Diagnosis and Significance of Cyanosis, Hyperpnea and Allied Conditions"; Dr. Wilber E. Post, Chicago, "Hypometabolism, a Factor in High Blood Pressure"; Dr. Ralph C. Brown, Chicago, "Medical Management of Peptic Ulcer"; Dr. Paul B. Magnuson, Chicago, "Fractures"; Dr. Louis M. Warfield, Milwaukee, "Tachycardia"; Dr. Sumner L. S. Koch, Chicago,

"Treatment of Acquired Contractures of the Hand"; Drs. Irving F. Stein, Chicago, "Use of X-Ray in Obstetric and Gynecologic Diagnosis"; Willard C. Olson, Ann Arbor, "Behavior Problems in School Children"; David S. Hillis, Chicago, "Diagnosis of Contracted Pelvis"; Isaac A. Abt, "Specific Infections of Infancy and Childhood"; Alexis F. Hartmann, St. Louis, "Acidosis, Alkalosis and Dehydration"; Clark W. Finnerud, Chicago, "Diagnosis and Treatment of Common Skin Diseases in Childhood," and Harry S. Gradle, Chicago, "A Statistical Analysis of Ophthalmic Patients." The entertainment will include golf, bridge and theater parties, style shows and rides through the fruit belt and on Lake Michigan.

MINNESOTA

Fined for Illegal Practice.—J. Knapp, Minneapolis, was fined $300 for practicing medicine without a basic science certificate, August 18. Knapp had been posing as a specialist in rheumatism, nervousness and stomach disorders. He had followed the barber and painting trades, yet claimed to have a cure for all stomach ailments except cancer.

Society News.—The conferences recently held by the state department of health were limited to surveys of conditions in each region where the conference was held with emphasis on the child welfare. The centers visited were Minneapolis, Austin, Duluth, Fairmont, Glencoe, Detroit Lakes and Brainerd. Among the speakers were Drs. Theodore H. Sweetser, Minneapolis, on "The Place in a Community Health Program of the Physician, Dentist, Social Worker, Lay Member and Public Health Nurse"; William A. O'Brien, "What Is Wrong with Public Health?" Charles B. Wright, "New Relationship Existing Between Public Health Workers"; Frederick A. Willius, heart disease; Henry F. Helmholz, Rochester, "Control Measures Against Contagious Diseases," and Edward A. Meyerding, St. Paul.

MISSISSIPPI

Personal.—In the news item of the faculty changes at the University of Mississippi Medical School (THE JOURNAL, August 2, p. 349), the name of Dr. Philip L. Mull was erroneously included in the list. Dr. Mull was retained as professor of anatomy.

MISSOURI

Society News.—During the week of the Kansas City Fall Clinical Conference, October 6-10, the annual meeting of the Ensworth-Central-Northwestern Medical College Alumni Association will be held at St. Joseph. Dr. Leroi Beck, King Hill Building, St. Joseph, is in charge of local arrangements.

MONTANA

Personal.—Dr. Frank L. Watkins, director of health education in the public schools of Tulsa, Okla., was recently elected city-county health officer of Great Falls to succeed Dr. Thomas F. Walker. Dr. Watkins was formerly in charge of the Ohio Bureau of Vital Statistics and was affiliated with the Mississippi and Florida state boards of health. His salary at Great Falls was fixed at $5,000, of which $1,200 is paid by the federal government. Dr. Walker, it is reported, had held the position of county and city health officer for the last five years and resigned to enter private practice.

NEW JERSEY

Licenses Restored and Revoked.—At a meeting of the New Jersey Board of Medical Examiners, July 10, the license to practice medicine and surgery of Dr. Israel E. Rudman was reinstated. Dr. Rudman's license had been revoked, Sept. 19, 1929, he having been convicted in Maine on a charge of practicing criminal abortion. On the same date the licenses of Drs. Vincenzo Reno and Samuel C. Husbands were revoked. Dr. Reno was alleged to have presented a diploma which had been illegally obtained and which had been signed and issued unlawfully and under fraudulent representations. Dr. Husbands had been convicted of a crime involving moral turpitude. The evidence showed that he had been indicted and convicted for unlawfully selling narcotic drugs. The license of Dr. Henry W. Thayer was revoked by the board, April 17, having been convicted of the practice of criminal abortion.

NEW YORK

Society News.—At the recent annual meeting of the Medical Society of the State of New York, a section on physical therapy was inaugurated with Dr. Richard Kovacs as chairman. Addresses were given by Drs. Clarence E. Anderson, Elmira, on "Physical Therapy for the General Practitioner"; Richard Kovacs, "Medical Diathermy"; Homer J. Knickerbocker, Geneva, "Physical Therapy in Compensation Work," and Frank T. Woodbury, New York, "Phototherapy: Its Uses and Abuses."

New York City

Bandits Rob Hospital.—Posing as patients in the reception room of the Orthopedic Dispensary and Hospital, August 2, three armed men robbed the cashier of a package containing $6,000.

Personal.—Drs. Walter H. Conley and Geza Kremer retired August 1 from the department of hospitals. Dr. Conley was general director of the department's institutions on Welfare Island and in the Bronx and had been with the city's hospital department for twenty years; Dr. Michael J. Thornton has been named acting director. Dr. Kremer was medical superintendent of Sea View Hospital, Staten Island, and had been with the department for thirty years.——A party of twenty-two physicians from Germany, Austria, Czechoslovakia and Yugoslavia arrived, August 2, for a three weeks' tour of the United States. They will visit hospitals and medical institutions in Buffalo, Detroit, Chicago, Rochester, Pittsburgh, Washington, D. C., Baltimore and Philadelphia. The tour was organized by the travel bureau for the American Medical Association of Vienna.

OREGON

Personal.—Dr. Frederick E. Trotter, president of the Hawaii Territorial Board of Health, recently visited Portland. He said that leprosy is on the decline in Hawaii as the result of the improvements in living conditions.——Dr. Maurice E. Corthell, Bandon, is reported to have accepted a position with the U. S. government as physician for the Copper River, Alaska, section, where he plans to stay five months.

Deaths in Oregon in 1929.—The U. S. Department of Commerce announces that there were 10,668 deaths in Oregon during 1929 as compared with 10,489 in 1928. Diseases of the heart (2,130) were not only the principal causes of death in 1929 but were more than double the number from cancer (1,015), which ranked second. Tuberculosis showed a continuous decrease from 1926, the most marked of which was from 1928 to 1929. No death rates for the year have been computed because any rates based on population estimates made at this time would probably have to be revised as soon as the 1930 census figures become available.

Society News.—The Portland City and County Medical Society was addressed, July 16, by Dr. Oliver P. Kimball, Cleveland, on "The Progress of Goiter Prevention."——The Eastern Oregon District Medical Society held its annual meeting at Pendleton, August 27. Among the speakers were Drs. Richard B. Dillehunt, Portland, "The Surgical Treatment of Infantile Paralysis"; John H. Fitzgibbon, "Occlusion of the Fallopian Tubes"; Raymond E. Watkins, "Prolapse of the Uterus"; James Marr Bisaillon, "Pulmonary Tuberculosis," and Mr. Clyde C. Foley, "The Oregon Plan of Local Medical Organization."——The first issue of the official bulletin of the Oregon State Medical Society and affiliated organizations was published in August. It is entitled the *Rod and Serpent*. The issue consists of sixteen pages and an attractive cover.

PENNSYLVANIA

Personal.—The dedication of the bronze bas-relief of Col. John Van Rensselaer Hoff took place, July 17, at Carlisle Barracks. The speakers were Cols. Charles R. Reynolds and James Guthrie, and Major General Merritte W. Ireland, surgeon general, U. S. Army.——Dr. John B. Critchfield, Lock Haven, was recently appointed chief of the tuberculosis section of the state bureau of communicable diseases, succeeding the late Dr. Edgar T. Shields, Harrisburg.

Society News.—The Cambria County Medical Society at the state sanatorium at Cresson, August 14, was addressed by Drs. Daniel P. Ray, Johnstown, on prostatectomy and Arthur M. Mendenhall, Indianapolis, "Some of the Newer Things in Obstetrics."——The Allegheny County Medical Society was addressed recently by Dr. Morris A. Slocum, Pittsburgh, on "Treatment of Varicose Veins by Sclerosing Drugs."——A symposium on the sterilization of the mentally defective patient was held at a recent meeting of the Blair County Medical Society. Speakers included Drs. Joseph S. DeJarnette, superintendent, Western State Hospital, Staunton, Va.; Harvey M. Watkins of the Polk State School, Polk; James Allen Jackson, Danville, and Theodore Diller, Pittsburgh. The June meeting of the society was held in conjunction with the annual Altoona Hospital Clinic. Addresses were given, among others, by Drs. John D. Hogue on "Electrocoagulation of Tonsils," and Lewis P. Glover, "Relation of Ophthalmology to Systemic Disease."

——The Huntingdon County Medical Society was addressed recently by Dr. Frank Guillard, Saxton, on "Various Cardiovascular Diseases."——The Northwestern Pennsylvania Medical Association convened, July 11, at Conneaut Lake Park for its annual meeting. Talks were given by the following Pittsburgh physicians: William L. Mullins, "Some Aspects of Coronary Occlusion with Reference to Abdominal Symptoms"; John P. Griffith, "Surgical Problems of Gallbladder Disease," and William W. G. Maclachlan, "Some Clinical Aspects of Pneumonia."——The annual meeting of the Fifth Councilor District Medical Society was held at Piney Mountain Inn, July 17. Dr. Harold L. Foss, Danville, spoke on "Surgical Treatment of Hypertrophy of the Prostate Gland."——The first meeting of the tricounty medical organization of Clearfield, Indiana and Jefferson counties was held, June 12, at Indiana. Addresses were given by Drs. James A. Dickson, Cleveland, on "Low Back Conditions"; Albert J. Bruecken, "Early Diagnosis of Cancer"; George W. Grier, Pittsburgh, "Significance of X-Ray Interpretation of the Chest," and William H. Mayer, "The Nervous Patient from the Standpoint of the General Practitioner."——The annual meeting of the Third Councilor District Medical Society will be held at Dallas, September 2, and will be addressed by Dr. James T. Gwathmey, New York, on "Synergism of Magnesium Sulphate and Morphine."

Philadelphia

Hospital News.—The Temple University Hospital, August 15, opened two wards honoring Dr. W. Wayne Babcock; the wards, one for women and one for men, are designed especially for surgical cases and were donated and equipped by friends of Dr. Babcock.

Personal.—Dr. Frank Bacon Hancock, who retired, July 8, from active duty after twenty-seven years' service as a police and fire surgeon, was presented with a gold medal by the director of public safety and was made an honorary police surgeon and warmly thanked for his long service to the city.

SOUTH CAROLINA

Society News.—The Chester County Medical Society was recently addressed by Dr. Lucius G. Gage, Charlotte, on "Value of Skin Sensitization Tests in Bronchial Asthma."——The Second District Medical Association, at its recent meeting at Ridge Spring, was addressed, among others, by Dr. Kenneth M. Lynch, Charleston, on "Our Office Routine for Treating Venereal Patients," and Dr. Drayton M. Crosson, Leesville, "Our State Medicine."——The Spartanburg County Medical Society was addressed, July 28, by Drs. Frank Howard Richardson, Black Mountain, N. C., on "Posture in Children," and Horton R. Casparis, Nashville, Tenn., "Causes of Infant Mortality During First Year of Life."

TEXAS

Society News.—The Angelina County Medical Society was addressed, June 20, at Lufkin, by Drs. Thomas W. Burke and Robert B. Bledsoe, both of Lufkin, on hyperthyroidism and heart disease, respectively.——The Bell County Medical Society was recently addressed at Temple, among others, by Drs. William A. Chernosky on "Treatment of Cancer of the Face"; Thelbert F. Bunkley, "Extra-Uterine Pregnancy: Delivery of Living Baby," and Charles M. Simpson, "Malignant Tumors of the Renal Pelvis"; all of the speakers were from Temple.——Dr. Edwin Ghent Graves, Houston, addressed the Cameron County Medical Society, June 16, on heart diseases.——The Cook County Medical Society was addressed, June 16, by Drs. Julius McIver, Dallas, and Marcus Stuart Seely, Dallas, on "Occiput Posterior Positions and Their Management" and "Malpositions of the Uterus," respectively.——The Dallas County Medical Society was addressed, June 12, among others, by Drs. Taylor C. Gilbert, Dallas, on "Carcinoma of the Breast," and Curtice Rosser, Dallas, "Etiology of Anal Cancer."——Drs. Earl Jones, Brownwood, and Oscar N. Mayo, Brownwood, addressed the June 4 meeting of the McCulloch County Medical Society on "The Thymus Gland," and "Epithelioma of the Neck, Face and Arms," respectively.——The program presented before the Tarrant County Medical Society recently consisted of talks by Drs. Arthur H. Flickwir, Fort Worth, on "Curative Medicine in Reference to Public Health"; Thomas B. Bond, "Skull Abnormalities and Skull Injuries," and Atras E. Jackson, Fort Worth, "Effect of Chemical Agents on the Optic Nerve."——The Wichita County Medical Society was addressed, among others, June 10, by Dr. Everett F. Jones, Wichita Falls, on "Fractures of the Transverse Processes of the Lumbar Vertebrae."——Dr. Van C. Tipton, Georgetown, addressed a recent meeting of the Williamson County Medical Society at Georgetown on "Relation of the Private Practitioner to Public Health Work."——The Baylor summer clinics will be held at the Baylor College of Medicine and Hospital, Dallas, September 8-20. This course is open to any physician without charge. It will cover the subjects of surgery, cardiac diseases, pediatrics, renal diseases and acute infectious diseases. Necessary arrangements should be made through Dr. Walter H. Moursund, dean.

UTAH

State Medical Meeting at Salt Lake City, September 9-11.—The thirty-sixth annual meeting of the Utah State Medical Association will be held at Salt Lake City, September 9-11, with headquarters at Memorial House, Memory Grove, and under the presidency of Dr. Howard P. Kirtley, Salt Lake City. Papers are scheduled to be given by Drs. Dean Lewis, Baltimore, on "Surgery of the Spleen"; Aldred S. Warthin, Ann Arbor, Mich., "The Newer Therapeutic Attack on Cancer"; Andrew C. Ivy, Chicago, "Observation on the Cause of Gallstones"; George M. Fister, Ogden, "Urography"; William Gerry Morgan, Washington, D. C., "Some Observations on Etiology"; Anita M. Muhl, San Diego, Calif., "The Emotional Factor in Chronic Organic Disturbances"; Louis E. Viko, Salt Lake City, "Arteriosclerotic Heart Disease"; Leo Eloesser, San Francisco, "Diagnosis and Treatment of Bronchiectasis," and William S. Thayer, Baltimore (subject not announced). The second golf tournament of the state association will be held at the Salt Lake Country Club, September 9-10; those desiring to enter should notify Dr. Alfred C. Callister, 706 Medical Arts Building, Salt Lake City; green fee, $2 each day. An informal reception will be given at the Fort Douglas Club House Tuesday evening by President and Mrs. Kirtley for members of the association and their ladies. The annual banquet will be held at the Hotel Utah on Wednesday.

VIRGINIA

Personal.—The Medical College of Virginia conferred the degree of bachelor of letters on Dr. Joseph L. Miller, Thomas, W. Va., June 3.——Dr. William A. Reese entered on his duties as city physician of Petersburg, August 1.

State Care of Crippled Children.—A new program of state care for crippled children in Virginia has been arranged jointly, it is reported, by the state departments of health and public welfare. Each department has received legislative grants of $25,000 for the work. Whenever possible, children are to be treated in their homes through the cooperation of local physicians. The more serious cases will be sent to hospitals.

Society News.—The Virginia legislature at its 1930 session passed measures making compulsory the education of all deaf and blind children in the state and authorized local school authorities of cities and counties to establish and maintain special classes for the education of the blind and partly blind children in public schools in cooperation with the Virginia Commission for the Blind.——The origin of fourteen cases of typhoid in the vicinity of Altavista, reported July 26, are being traced by Campbell County authorities. Lynchburg authorities reported two deaths and eight cases so far this season.——The Loudoun County Medical Society was addressed, July 8, by Dr. John A. Gibson, Leesburg, on status of the county physician in general practice, and Dr. John E. Knight, Warrenton, the benefiits of organized medicine.——The Post-Graduate Medical Society of Southern Virginia held its regular meeting at Emporia, July 15. The program consisted of a symposium on diseases of the thyroid.——Dr. A. A. Creecy, Newport News, talked on "Acute Specific Urethritis," July 2, before the Northampton County Medical Society.

WASHINGTON

Hospital News.—One hundred beds will be added to the capacity of the veterans' hospital at Walla Walla, which has recently been completed at a cost of $100,000. The new building contains an auditorium and provisions for entertainment.

Personal.—Dr. Rhodric W. Browne has recently been appointed medical officer in charge of veterans' hospital number 85 at Walla Walla. He has been in charge of the U. S. Veterans' Hospital at Fort Bayard, New Mexico. He will exchange positions with Dr. William E. Park, who was in charge of the Walla Walla hospital for six years.

State Medical Meeting at Bellingham, September 1-3.—The annual meeting of the Washington State Medical Association will be held at Bellingham, September 1-3, with headquarters at the Mount Baker Lodge, on Mount Baker, under the presidency of Dr. Hiram E. Cleveland, Burlington. Papers are scheduled to be given by Drs. James T. Rooks, Walla Walla, on "Treatment of Acute Diffuse Septic Meningitis by

the Intramuscular Injection of Autocerebrospinal Fluid"; Dean Lewis, Baltimore, "Surgical Diseases of the Spleen"; Edwin J. Barnett, Spokane, "Vomiting in Infancy"; J. F. Le Cocq, Seattle, "Separation of Upper Femoral Epiphysis"; Harry C. Olmsted, Seattle, "Experience with Evaporated Milk in Infant Feeding"; George W. Swift, Seattle, "Traumatic Injuries to the Brain"; Charles B. Ward, Spokane, "Epithelioma of the Lip"; Herbert E. Coe, Seattle, "Harelip"; John M. Blackford, Seattle, "Hypertension"; Fred W. Rankin, Rochester, Minn., "The Lower Bowel"; Horace J. Whitacre, Tacoma, "Medical Economics"; Frank Hinman, San Francisco, "Urology"; Casper W. Sharples, Seattle, "Gallbladder Disease"; John C. Lyman, Walla Walla, "Seventy-Five Consecutive Gallbladder Cases"; John E. Else and Millard S. Rosenblatt, Portland, "Further Studies in the Relationship of Gallbladder and Liver Infections"; Dorrell G. Dickerson, Seattle, "Tumors of the Spinal Cord"; Ralph H. Loe, Seattle, "Polyglandular Disease with Predominating Thyroid Symptoms," and Chauncey D. Leake, Ph.D., San Francisco, "History of Surgical Anesthesia." There will be a golf tournament Monday. Entertainment includes a Public Health League luncheon, banquet and dinner dance; the Skagit and Whatcom County medical societies will also entertain. Immediately following the meeting will be the annual session of the Pacific Coast Oto-Ophthalmological Society at Victoria, B. C., and from September 4-5 will be held the annual meeting of the county and city health officers of Washington at Bellingham under the auspices of the state board of health.

PORTO RICO

Personal.—Visiting lecturers at the School of Tropical Medicine for the ensuing year will include Col. Charles F. Craig, editor of the *American Journal of Tropical Medicine* and director of laboratories at the Army Medical School, Washington, D. C., and Dr. Theobald Smith, formerly director of the Rockefeller Institute at Princeton, N. J. Dr. Earl B. McKinley, San Juan, director of the school of tropical medicine, is spending the summer as visiting professor at the University of Chicago, where he is conducting a course on filtrable viruses and rickettsia diseases.

CANADA

Society News.—At the annual meeting of the British Columbia Medical Association, Vancouver, June 25, the speakers were Drs. John G. Fitzgerald, Toronto, on "Some of the Possibilities of the Future in the Practice of Medicine," and Oskar Klotz, Toronto, "Medical Meanderings in the Tropics." Officers elected for the ensuing year are: Drs. George L. Hodgins, Vancouver, president; Thomas McPherson, Victoria, president-elect; Henry H. MacKenzie, Nelson, vice president; William T. Ewing, Vancouver, secretary.——At the recent second annual convention on social work, Premier Ferguson announced that a series of clinics would be established throughout Ontario to ascertain whether inmates of the various institutions for the mentally abnormal could be restored to society through scientific treatment. The plan is devised to avoid the expenditure of more than $500,000 for the care of persons who should never have been admitted to Canada.——The Alberta Association of Public Health Workers held its annual convention at Calgary, June 23-24. Papers were presented, among others, by Drs. James Scovil Murray, Calgary, on undulant fever; Geraldine Oakley, "Improving the Physique of the School Child"; Angus C. McGugan, a review of the organization and progress of county health units in the United States and Canada, and Malcolm R. Bow, deputy minister of health, "Modern Tendencies in Public Health Work." A portion of this session was devoted to a discussion of the control of tuberculosis.

GENERAL

Society News.—The American Protestant Hospital Association will convene at the Hotel Roosevelt, New Orleans, October 17-20. Among other speakers scheduled are Drs. Benjamin A. Wilkes, Hollywood, Calif., "The Duty of the Hospital to the Intern, and the Intern to the Hospital"; John H. Musser, New Orleans, "Interns," and Willard C. Stoner, Cleveland, "The Increasing Cost of Medical and Hospital Care." The guests of honor at the annual banquet will be Drs. Christopher G. Parnall, Rochester, N. Y.; Lewis A. Sexton, Hartford, Conn., and Alton Ochsner, New Orleans.——The Thirteenth International Congress of Hydrology, Climatology and Medical Geology will be held at Lisbon, October 15-23. During the congress visits will be paid to the more important towns and spas of Portugal and an excursion will be made to the Azores and Madeira. Further information can be obtained from the Faculty of Medicine, Lisbon.

Impostor Passes Worthless Checks.—The Department of Public Safety of Newark, N. J., calls attention to an impostor, giving the name of Elmer E. Clark. He has a history of having had a spinal fusion operation following a fracture of the first lumbar vertebrae in an airplane accident. He has a long scar in the center of his back and one on his left forearm. He visits physicians faking a history of a recent fall. He told a Newark physician that he had just fallen downstairs and injured his back and was placed in a hospital. He gave the hospital a worthless check for $76 and another one to the attending physician for $260, receiving in return some change. The police are anxious to have this individual apprehended. Clark is about 35 years old, 5 feet 9 inches tall, weighing 165 pounds, ruddy complexion, reddish hair, blue eyes, good teeth, smooth face and rather broad features, a good dresser and talker and is apparently of Irish or English extraction.

Conference on New Bureau of Narcotics.—A conference of representatives of medical, dental and pharmaceutical and other associations was held, August 12, in Washington, D. C., under the auspices of the U. S. Public Health Service, to consider certain provisions under a recent act of Congress creating the new bureau of narcotics. The conference related particularly to questions of the necessity for and the methods to be used in determining the quantities of crude opium, cocoa leaves and salts and derivatives together with such reserves as are necessary to supply the normal and emergency medicinal requirements of the United States. Surg. Gen. Hugh S. Cumming stated that a new duty of the public health service involves the inauguration of field surveys and investigations of a quantity of these drugs now used by physicians, dentists and veterinary surgeons in hospitals, dispensaries and community practice. Mr. H. J. Anslinger, new chief of the bureau of narcotics, stated that one of the policies of the new narcotic bureau would be to devote most of its attention to detecting and eliminating the more important and larger illicit narcotic supplies and leave the cases of smaller significance to state and local enforcement officers.

FOREIGN

Award of Dawson Williams Prize.—On account of his work in behalf of rheumatic children, Dr. Frederick J. Poynton was given the first award, consisting of 50 guineas, of the Dawson Williams Memorial Prize. Dr. Poynton is senior physician to the Hospital for Sick Children, Great Ormond Street. The prize represents the interest accruing from collected funds commemorating the work of the late Sir Dawson Williams, editor of the *British Medical Journal*. The prize is open to any registered medical practitioner in the British empire. The board of award is composed of trustees who are the current incumbent presidents of the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Royal Society of Medicine, section of diseases of children of the Royal Society of Medicine and the editor of the *British Medical Journal*.

Radium Centers in Great Britain.—The radium commission recently announced the following geographic distribution of radium centers to be recognized as soon as they have complied with the requirements of the commission: in England, seven centers at Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle and Sheffield; in Scotland, four centers at Aberdeen, Dundee, Edinburgh and Glasgow; in Wales, one at Cardiff. One London center is to be for graduate teaching in radium therapy and will be located at the Radium Institute and the Mount Vernon Hospital. About 17 Gm. of radium has been ordered by the National Trust and provisionally allocated by the commission to national centers. The following centers have completed their organization and have been actually supplied with radium by the commission: Birmingham, Cardiff, Edinburgh and Aberdeen. The commission approved the establishment of plants for the preparation of radon (radium emanation) to supplement the supply of radium. The plan of allocation of Great Britain's supply of radium will avoid a splitting up of the limited stock of radium into small quantities, which not only give inefficient results but contribute little, if anything, to a nationally controlled and coordinated study and practice of radium therapy. In collaboration with the radiology committee of the Medical Research Council and the British Empire Cancer Campaign, the Radium Commission has prepared a set of "Radium National Forms" to be used in all recognized centers in order to provide clinical records on a uniform basis and eventually to be incorporated in general national statistics. Specimen copies may be obtained from the secretary of the Radium Commission at 5 Adelphi Terrace, London, W. C. 2.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 9, 1930.

The Beit Fellowships for Medical Research

The Beit fellowships for reseach in medicine and the allied sciences were founded in 1909 by the munificent gift of $1,150,000 from Sir Otto Beit, a gift for which there was no precedent in English medicine. The annual income has ever since been used for the endowment of fellows engaged in research. The fellowships are whole-time appointments, though teaching related to the allied branch of science is permitted. The candidate selects the subject of his research and in submitting gives an account of his previous career to referees who will give evidence of his fitness. The value of the fellowships is $2,000 per annum for three years, $2,500 for the fourth year and $3,500 for the fifth, sixth and seventh years. The total number of fellows elected so far is 130 and but for the war would have been greater. The type of the fellows is shown by taking the year 1925 as a convenient limit and following their careers. Up to that year 79 men and 22 women were elected. Of the men, 7 died at a relatively early age. Of the 72 remaining, 4 have received the highest scientific distinction possible in this country, the F.R.S., and 19 have been appointed university professors, a high proportion considering that many are still young. Most of the remainder occupy whole-time posts for teaching, research or scientific work and many have continued the careers on which they entered when elected. The two best known are Sir Thomas Lewis, F.R.S., whose contributions to cardiology form the greatest advance made in English medicine in recent years, and Prof. Edward Mellanby, F.R.S., who has proved the dependence of rickets on vitamin deficiency. The Beit fellows have been welcomed in many laboratories and institutions, not only in this country but on the continent and in America. The following research is of great practical importance.

YELLOW FEVER RESEARCH

In 1927 a fellowship of the value of $5,000 per annum was created for research in tropical medicine. Dr. Edward Hindle was appointed and his work has afforded an answer to several questions of great practical importance in connection with yellow fever. He has shown that: 1. A vaccine prepared from the organs of monkeys of a certain species infected with the virus of yellow fever protects other animals of the same species. 2. Animals thus protected can withstand a dose of the virus a million times as great as that which is fatal to the unprotected. 3. It has not yet proved possible by similar methods to immunize human beings. 4. Europeans may suffer from a mild disease, not clinically recognizable as yellow fever, and subsequent examination of their blood may prove positive for all the accepted tests of immunity. If this is also true of natives it may answer the most important of all the questions connected with yellow fever; namely, Where is the virus between the occurrence of epidemics? and How is the continued existence of the disease maintained? The late Sir Robert Boyce believed that the disease was kept going by mild but unrecognized cases among the natives. In view of the dangers of this work, the trustees have decided not to continue the research under present conditions. The loss to science by the deaths of those great workers Stokes and Noguchi, while engaged in yellow fever research, will be recalled.

The Death Penalty

Further evidence from abroad was heard by the select committee of the house of commons on capital punishment. Sir Simon von der Aa of the International Prison Commission, Berne, told the committee of the experience of the Netherlands and of Switzerland since the abolition of the death penalty. In Holland a great impression was made on the public mind by a murder which was committed by a man who had witnessed an execution two days before. Since the abolition of the death penalty in Holland there has been no indication of a real increase of murder, although the figures showed oscillations. Imprisonment for life was the greatest penalty for murder. This sentence is often commuted to a period of years. In the last ten years several men, whose sentences were thus commuted, have been released. Not one of them has since come under any other charge. The abolition of capital punishment had not encouraged criminals to carry arms. Turning to Switzerland, Sir Simon said that ten of the twenty-five cantons had reintroduced capital punishment since it was abolished for the whole country. The homicide rate had been a little lower in the cantons without the death penalty than in the others, though it had not increased in either group. His personal opinion was that capital punishment did not deter murder.

The Value of Alcohol

The use of alcohol as a beverage extends over the whole period of civilization in all countries and of this drug man has had an indefinitely greater experience than of any other. In modern times much research and unending discussion have been devoted to it. Yet its value as a beverage and a drug are still disputed. A royal commission on licensing (of saloons) is now hearing evidence from various sources. Among these is expert medical evidence on the effect of alcohol on the human organism. Dr. Roche Lynch, senior official analyst to the home office and director of the department of chemical pathology at St. Mary's Hospital, did not think that alcohol taken in moderation was harmful and there was evidence that a small amount assisted digestion. Dr. W. D. Newcomb, morbid anatomist of St. Mary's Hospital, considered that there was no definite evidence that alcohol in moderate quantities was harmful.

ALCOHOL IN THERAPEUTICS

Dr. F. S. Langmead, professor of medicine in the University of London, held that the chief value of alcohol as a drug lay in the production of euphoria. It could thus relieve depression and anxiety in illness and so improve the mental attitude of the sick, on which the outcome largely depended. It was particularly useful in tiding the patient over a crisis and in convalescence when anxiety or irritability were retarding recovery. In old age it reduced the intensity of minor discomforts. But he did not advise its use for this purpose in nervous and mental diseases, such as neurasthenia and hysteria, as it was liable to form a habit in such patients. In moderation, it increased the gastric secretion and prolonged the time during which the gastric secretion was poured out. It was a valuable digestive drug in debilitated states, convalescence, old age and fatigue, both by its local action on the stomach and by its action on the nervous system. Many carminatives in the pharmacopeia owed much of their efficacy to their high percentage of alcohol. Alcohol was rapidly absorbed, did not require digestion, and was readily burned by the body, 1 gram providing 7 calories of energy. It could spare the combustion of body fat but could not form new tissue or improve the condition of the blood in anemia. Large quantities—up to one tablespoonful hourly of brandy—could be destroyed in the body without symptoms of intoxication and might provide almost enough of energy to maintain life for a patient at rest in bed; in fever even larger amounts could probably be utilized without harmful effects. Hence the value of alcohol in conditions of "starvation," such as infantile diarrhea, chronic malnutrition and exhaustion, in which other foods were difficult of administration or absorption. In some cases alcohol appeared to have a particularly beneficial effect as a tonic. In diabetes it was useful during temporary periods of starvation, both as an energy provider and as a mental sedative.

PARIS

(From Our Regular Correspondent)

Aug. 6, 1930.

International Congress of Microbiology

The first International Congress of Microbiology held its opening session, July 20, in the Great Hall of the Pasteur Institute, under the honorary chairmanship of Dr. Roux and the actual chairmanship of Dr. Bordet, director of the Pasteur Institute of Belgium. Thirty-nine nations were represented at the Société internationale de microbiologie, which organized this important meeting. After the opening addresses delivered by Dr. Roux and Professor Bordet, Mr. Madsen, chairman of the committee on hygiene of the League of Nations, responded in the name of the foreign delegates. Also the following men spoke: Hahn of Germany, Wright of England, Sacho of Austria, Park of the United States, Sanarelli and Belfonti of Italy, and Tello of Spain. The organization of the congress, which was under the direction of Dr. Dujarric-de-la-Rivière, who gave at his home a splendid reception to the conventionists, was perfect. Four sections held their meetings simultaneously in the different amphitheaters. The practical interest of the congress centered chiefly in the papers delivered in the first section, in which the problems were most interesting and were discussed by men of international reputation who were most qualified to make known their personal opinions.

VARIABILITY OF MICRO-ORGANISMS; LYTIC PHENOMENA

Bordet read a paper on the bacteriophage, or transmissible lysis. He does not believe in the existence of a new invisible virus. He thinks rather that in a given colony of micro-organisms there is a differentiation between strong and weak bacilli, the former exerting by their normal secretions a destructive action on the latter, and, if need arise, also on the bacilli of other species. It is a question of the survival of the fittest. Bordet illustrated his view by numerous examples taken from the biology of *Bacillus coli* and Shiga's bacillus. He rejects absolutely the theory of d'Herelle according to which a bacillus lives in symbiosis with a live parasitic virus destined to destroy it. A second paper was presented by Felix d'Herelle himself, who supported his opinion as to the actual existence of the destructive principle of bacteria, the bacteriophage, which he discovered and to which he assigns all the characteristics of a living existence. He admits that the phenomenon is complex but contends that bacteriophagia can alone explain the spontaneous recoveries in infectious diseases. Another paper was read by Ledingham and Arkwright on certain aspects of the variability of micro-organisms, and a third paper was presented by Max Neisser on the same subject.

SCARLET FEVER

The origin of the prophylaxis and the treatment of scarlet fever furnished the subject-matter of several papers delivered by prominent specialists. Mr. Cantacuzène favors the theory that, in general, the streptococcus is the causative agent and not a particular strain. The Dick reaction, which is an irregular and unstable reaction, has, in his opinion, a general characteristic value with regard to all the scarlet fever infections and not the streptococcus alone. The agglutinability by the serum of scarlet fever convalescents conferred on nonscarlatinal streptococci that are cultivated in contact with filtrates of cultures of scarlatinal streptococci can be explained, he thinks, only by the existence of an ultravirus associated with the streptococci and carried by them.

R. Debré, G. Ramon and Claudia Petot, starting with a filtrate of scarlatinal streptococci, prepared an antigen utilizable in trials of immunization against scarlet fever. Its subcutaneous injection in man causes a slight or rather severe reaction, with the production of fever and an exanthem, depending on the mode of preparation adopted. Three doses of this anatoxin render the Dick reaction negative in 64.8 per cent of the cases; but it becomes again positive in some subjects, within a few months. A fourth injection makes the Dick reaction again negative and for a much longer period—possibly permanently, in some cases. By employing highly virulent strains of streptococci possibly an antigen can be prepared capable of inducing sure and enduring immunity.

Mr. Dochez holds that the hemolytic variety of streptococcus, encountered in all scarlet fever patients, must be regarded as an individualized and special type. It secretes a special toxin capable of producing all the symptoms of the disease. By repeated injections over a long period of time in the horse, one can obtain a serum capable of exerting a specific action when injected early. All human beings are exposed from childhood to infection by the hemolytic streptococcus and become thus gradually immunized. Some persons elaborate neutralizing substances that remain in the blood and make them less vulnerable. But the state of immunization and of sensitization passes through variable periods, and the appearance of scarlet fever is only an accident occurring during a period in which the immunity appears to have given way.

Mr. Friedmann, in his paper, opposed the idea of a special strain of streptococcus being the causative agent in scarlet fever. There are only variable periods of virulence, depending on the season, and possibly on the region. Treatment with the serum of convalescents has a high curative value.

Another paper, presented by Professor Teissier, brought out sharply the diversity of opinion that prevails even among eminent authorities on the etiology of scarlet fever. The author suggested the appointment of an international commission for the study of the question, in order that accord might be reached.

Mr. Zlatogoroff discussed cultures from liquid filtrates derived from scarlet fever patients, with appearance of diplogranulations, which are likewise cultivable and capable of producing scarlet fever experimentally. They are, however, incapable of reproducing the streptococcal form even in prolonged cultures. It would appear, therefore, that the disease is due to a filtrable virus, the rôle of which is to activate the streptococcus.

Mr. Wadsworth's paper dealt with antistreptococcal serums, the content of which in antitoxic units is extremely variable—sometimes nil. He tested twenty-four serums produced from a dozen different laboratories of the United States. The serum in which the strain Dochez N. Y. 5 was employed appeared to him to have the highest potency. That explains the variability in the results secured. Mr. Wadsworth does not believe in a specific pathogenic agent of scarlet fever but considers that disease simply a manifestation of streptococcus infection, the nature of which depends rather on the susceptibility of the tissues than on the peculiar properties of the streptococcus that causes it.

FILTRABLE ELEMENTS OF NEUROTROPIC VIRUSES

Levaditi, Rivers and Netter presented papers outlining their previous personal researches. Netter emphasized the fixation reaction in herpes zoster and in varicella, on which he bases the belief in the identity of the two diseases through a mutation comparable to that of smallpox and cowpox.

UNDULANT FEVER AND CONTAGIOUS ABORTION

Mr. Bang stated that, in Denmark, undulant fever appears to be caused solely by *Brucella abortus*. *Brucella melitensis* has never been found there, and contagion through goats has never been observed. Adults become infected directly by cows and children by the use of infected milk. *Brucella abortus* persists for a long time in the organism of the cow—even after abortion. Mr. Kling reached the same conclusions; he stated that contagious abortion is observed only in bovines—not in goats. He regards the identity of the two diseases as certain. Mr. Rinjard expressed the same view. But he regards *Brucella abortus* as possessing only a slight virulence for man. In

France it has produced only sporadic cases—never an epidemic among human beings.

THE PATHOGENESIS OF CHOLERA

In his paper, Mr. Kitashima brought out that there are several vibrios of cholera, which have been isolated by agglutination reactions. The paper of Mr. Sanarelli emphasized the enterotropic property of the cholera vibrio; for, when injected subcutaneously or intravenously, it directs its attack against the deep layers of the intestinal mucosa.

INFLUENZA

Mr. Pfeiffer defended the pathogenic rôle of the bacillus that he discovered. He stressed that the Pfeiffer bacillus is extremely widespread but it should not be confounded with numerous similar species. Many persons become immunized by slight previous attacks and become carriers of the organism. Nevertheless, Pfeiffer admits that the etiology of influenza is still obscure and that it remains to be explained why this bacillus, which is common everywhere, becomes virulent only during periods of epidemics.

SEROLOGY AND IMMUNITY

Mr. Belfonti and Mr. Sachs each presented a paper on the rôle of lipoids in the production of immunity. Belfonti distinguished the lipoids that are naturally hemolytic from those that become hemolytic by the enzymatic action of a virus. Sachs discussed the power of lipoids to form antibodies.

The cultivation of tissues was the subject of papers by Canti, Carrel, Fischer and Madam Rhoda Erdmann, respectively. The last mentioned investigator recalled her experiments on the spontaneous production of experimental tumors by the change of diet. The different reactions of the reticulo-endothelial system, according as the tumor is of that origin or results from a graft, are important. On the subject of blood groups, three papers were presented by Hirzfeld, Landsteiner and Lattès, respectively. Hirzfeld considered the evolution of group receptors, the appearance of antibodies and the group specificity of the tissues in their relations to the antigenic property of cancer. Lattès showed the importance of researches on incompatibilities before transfusion and on the inoculation of malaria in patients with dementia paralytica. Mr. Landsteiner dealt more particularly with applications to determine the identity of parents.

PROTISTOLOGY

Mr. Uhlenhuth presented a paper on hemorrhagic spirochetosis and spirochetoses of aqueous origin. Nicolle and Anderson explained the mechanism of the inoculation of spirochetoses of the blood by the bites of ticks (*Ornithodorus*). Mr. Martin Meyer, the discoverer of *Bartonella muris*, pointed out its rôle in the fatal anemia of splenectomized rats. A species of *Bartonella* (*bacilliformis*) is the causative agent of oroya fever, which occurs among the natives of Peru.

During the course of the congress, addresses were delivered by Professor Calmette, on preventive vaccination against tuberculosis by the BCG vaccine; Mr. Füllerborn, on immunity and allergy in diseases caused by worms; Mr. Martin, on antidiphtheritic vaccination in man; Mr. Park, on the comparative value of the toxin-anatoxin mixture and toxoid, and especially toxoid prepared according to the Ramon method, and Mr. Winogradsky, on the importance of the bacteriologic analysis of soil. There were, in addition, more than forty communications on various topics. The papers presented at this congress would form a large volume, which marks a stage in bacteriologic research. The congress decided to hold its next session at Berlin, in 1933.

The Crusade Against Cancer

The Ligue française contre le cancer held recently its annual general assembly under the chairmanship of Mr. Désiré Ferry, minister of public health. The ligue has furnished evidence of its activity by the opening of the anticancer center of Villejuif, of which Professor Roussy is the director, and the anticancer center of Malakoff. In addition, a new pavilion is to be built at the Charonne center. Considerable donations of radium are to be made to all the French cancer centers. The recent announcement of the discovery in Russia of important radium deposits awakens the hope that radium will soon become more easily obtainable and that prices for Belgian radium will be lowered. The general secretary deplored the fact that, in the homes for incurables created by the Assistance publique, cancer patients are not admitted, which compels them to find accommodations in private institutions. The objective of the ligue lies chiefly in the early diagnosis of cancer, secured by inviting the public to come for consultation to the anticancer centers as soon as the first fears arise. The minister congratulated the members of the ligue and encouraged their efforts. He recalled that cancer, in France, is now the third or fourth most frequent cause of death, and that, in some sections, the mortality from cancer is even higher than from tuberculosis. He announced the creation of a "cancer week," which would furnish the occasion for a more intense publicity campaign of lectures and the distribution of leaflets throughout France. The constantly reiterated refrain will be: the prophylaxis of cancer; its early diagnosis; its prompt treatment, and the need of securing everywhere correct statistics. Cancer week has since been held. It was decided to start next year with the general sale of cancer seals, after the analogy of the tuberculosis seals.

A Week of Child Hygiene

Special weeks devoted to particular purposes are in vogue at present. There have been held, in succession, tuberculosis week, cancer week and syphilis week. It cannot be denied that there are many valid reasons for grouping together at one time and under widely different forms the efforts of the country put forth to attain a certain definite objective, which, in this instance, is one of the social scourges chosen from the many that are of a grave nature. It does not seem likely, however, that an "alcoholism week" will ever be instituted in France, though it would no doubt be useful. For such an innovation the production of, and the trade in, alcoholic beverages represent too vast and powerful interests and their political influence is too great. The authorities have been content to devote a week at the end of June to the hygiene of childhood, under the patronage of the minister of public health. The special week was the occasion for lectures in the hospitals, the schools and the *lycées* of France, in which addresses the essential principles of child rearing and child training were presented. In Paris, a commemorative ceremony was held at the Hôpital de la Charité, and a tablet was affixed to the pavilion where, in 1892, the first consultation center on infant care was established by Prof. Pierre Budin. A formal assembly was afterward held in the Great Hall of the Sorbonne, at which a number of addresses were delivered, all of them lauding the work of Pierre Budin. One of the addresses was delivered by Budin's last pupil, Dr. Devraignes.

Increase in Fees Demanded by Physicians

The conflicts between the medical syndicates and the administrations of the various departments of France are becoming more numerous. The departmental administrations are refusing to increase the prices of the fee schedule (although they are exceedingly low) accorded by them for physicians who attend aged and indigent persons. Although the prices of nearly everything have increased, in France, by from 500 to 600 per cent, since the valorization of the franc, the fees allowed physicians by municipalities for their visits have scarcely changed. Last year, at Mulhouse and at Strasbourg, there was a strike of physicians that lasted a month. It is difficult for the physicians to win a strike; for the municipalities appeal at once to the

young, newly graduated physicians in search of openings, and offer them a fixed salary, which, though small, is sometimes sufficient to entice them, as it facilitates their entry into practice, and the medical syndicates are often forced to yield in the face of these tactics. Recently, the physicians of the department of Nord, being unable to secure a reasonable increase of the prevailing fees, adopted a different course. They demanded of the patient a supplementary sum for which they gave him a receipt and suggested that he make appeal at the town hall for reimbursement. The town hall was bombarded by persons demanding reimbursement, and the authorities of the municipalities fear the wrath of the voters more than the dissatisfaction of the physicians. The outcome of the conflict is awaited with interest.

VIENNA

(From Our Regular Correspondent)

July 28, 1930.

Injection of Air into the Cranium of Children

At a recent meeting of the Gesellschaft der Aerzte in Vienna, Dr. Frisch spoke on his experiences with endolumbar inflation of air for therapeutic purposes in hydrocephalus and infantile epilepsy. During the last four years he has employed the method 150 times and is convinced that, in suitable cases, it will give good results. The method suggested by Bingel in 1919 of using a complicated apparatus to blow air into the interior of the cranium (Professor Zappert proposed this method in Vienna as early as 1906), has been simplified by Frisch. He uses simply a sterilized record syringe, and injects the air through a lumbar needle. The child is slightly anesthetized with ether. In infants, the procedure can be carried out ambulatorily; for older children, one or two days of hospitalization seems preferable. No untoward incidents have been observed. Frisch has confined the intervention thus far to two indications: infantile epilepsy and hydrocephalus. Not only typical organic epilepsy but also true idiopathic epilepsy (twenty-two infants with epilepsy having received such treatment) showed after the inflation of air a distinct improvement in the condition. In many cases the attacks did not return for a period of one and a half years; in others the respite lasted only from three to twelve months. The rapid physical development was often striking. The roentgenographic examination carried out for purposes of control revealed that the air must be in the ventricles in order to give the proper effect. Among twenty-two cases, there were six failures, three cases being of a purely functional nature.

Thirty-eight cases of hydrocephalus were treated. Here the procedure cannot be clearly circumscribed, and the results vary. It was found that, in order to obtain good results, several injections were required—one was not sufficient. In the hypersecretory types, if there is good communication, this procedure can be warmly recommended. Slight irritative phenomena after the inflation, such as increase of temperature and changes in metabolism, are characteristic of the treatment and are to be regarded as a direct effect on the heat regulatory center in the wall of the ventricle. The amount of air to be injected should correspond to the amount of cerebrospinal fluid that flows off—from 30 to 50 cc. During the discussion, several speakers emphasized that the cases of petit mal, not only in children but also in adults, are favorably influenced by this method.

The Congress of Psychopathology and Psychology

The psychologists recently held in Vienna a congress at which medical men, jurists, philosophers and theologians exchanged views. The session convened under the auspices of the recently founded Wiener Gesellschaft für angewandte Psychopathologie (Vienna Society for Applied Psychopathology) and was a success. About 270 representatives of all schools united to discuss the rich field of psychopathology and psychology. Of the many addresses only a bare outline can be given: Prof. E. Stransky of Vienna dealt with the relations of psychology to the civilization of the present; Professor Bühler considered the sign language in man and in animals. Interesting addresses on "The Normal and the Pathologic in Creative Performance," on "Psychopathology in Education and in the Performance of Work," and the paper of Morgenthaler of Switzerland on "Politics and Psychotherapy" received close attention from the audience. Allers of Vienna took up the question as to whether pathologic psychologic manifestations should be regarded as modifications of normal processes. A large portion of the session was taken up with questions pertaining to criminal law, from the standpoint of the psychologist. Prof. D. H. M. Maier of Zurich and Prof. Dr. Türkel of Vienna introduced the discussion of this problem. As the outcome of modern research in criminology it has become a cardinal demand in the administration of justice, and especially in the application of criminal law, to take into account facts of psychologic pathology and to adapt the punishment to the individual. It has been shown that it is absolutely necessary to prevent the assumption of a neurotic defiant attitude on the part of the prisoner, since otherwise the purpose of the punishment will be thwarted. It was especially interesting to note that both speakers do not esteem highly the value of proof furnished by psychiatric experts and consider an expert opinion of the whole faculty as entirely impracticable for psychic-forensic purposes. The excellent presentations of Professor Gatzuk of Russia on the significance of the reflex action of the nervous system for many characteristic features of an abnormal psychic existence, and also the teachings of the philosophic anthropology developed by Klages, were favorably received. Dr. Beth of Vienna discussed the borderlines between normal and pathologic religious fervor. Erismann of Innsbruck discussed "Changes in the Personality of Individual Members of the Mass of the Population." He emphasized the difference between "mass" and "people" or "nation." A people is creative and possessed of organic qualities; the masses are without order and lacking subordination. The better a nation understands being "a people" and not a mere "mass of population," the more enduring its civilization and the higher its ascent will be.

Exogenous Secondary Infections with Tuberculosis

At a recent meeting of the Wiener Gesellschaft der Aerzte, Dr. Wessely presented a patient from the Hajek clinic who awakened a great deal of interest. He was a man, aged 50, who had been affected for fifteen years with indurative tuberculosis of the upper lobes, without manifestations of disintegration. Eighteen months previously, tuberculosis of the larynx developed, which led to a stenosis of the larynx, with the result that tracheotomy had to be performed. After a good postoperative course and a good recovery, the patient in changing a cannula injured a finger, with the result that a poorly healing ulcer developed, with chronic lymphangitis extending to the upper arm. One of the suppurating glands was examined bacteriologically and living tubercle bacilli were found in the culture, evidence of an exogenous superinfection. Also the blood was examined for tubercle bacilli and the culture was positive. Thus, in a case of apparently benign, closed tuberculosis without fever, with good tendency to heal (the tracheotomy wound), tubercle bacilli in the blood stream were found, which is unusual. Thereupon, twenty-eight patients with tuberculosis of the larynx, selected at random at the aforementioned clinic, were examined for bacilli in the blood, with twenty positive results, or 70 per cent of the patients examined. All the positive cases presented a more or less active pulmonary process, some with cavities. From these observations, Wessely draws the conclusion that a number of views in regard to tuberculosis will have to undergo

a complete change. Above all, it must be assumed that tubercle bacilli are constantly found in the blood stream also in benign (that is, nonfebrile or subfebrile) types of generalized tuberculosis. Heretofore, it has been the belief that tubercle bacilli were found in the blood only occasionally, in especially severe cases. Furthermore, it was found that, also in other cases (especially dermatologic cases) that defied all treatment and also other forms of diagnosis, the blood examination revealed the presence of living tubercle bacilli, as appeared from the general discussion. Wessely stated also that at the clinic nearly every patient with manifestations of tuberculosis is examined for allergic symptoms (Mentoux method), but the clinic does not attach much value to this test.

Deaths in the Faculty of the University of Vienna

During recent weeks, the Vienna faculty of medicine has lost by death a number of professors whose names are well known. The neurologist Prof. Emil Redlich, who devoted himself chiefly to diseases of the brain, was for many years chief physician of the hospital for head injuries and afterward head of the hospital for nervous diseases. Also Prof. Dr. Peham, the gynecologist and obstetrician, who for many years served as the director of the second clinic for gynecologic diseases in Vienna, died recently. His attitude toward the question of artificial interruption of pregnancy on the basis of social indications is well known. He opposed absolutely any such extension of the indications for intervention—it is said, from religious motives. In any event, he was a strong supporter of the church party. Furthermore, Dr. Herrmann, a gynecologist who was the first in this country to carry out research on the endocrine glands of women, and Professor Leiner, a pediatrician, must be included in this list, which comprises only the men who were widely known.

BERLIN

(From Our Regular Correspondent)

Aug. 4, 1930.

Professors Suspended Pending Completion of the Lübeck Investigation

The senate of Lübeck has suspended from office Professor Deycke, Professor Klotz and Dr. Altstaedt, until the matter of responsibility for the Lübeck disaster is cleared up. As soon as possible after completion of the preliminary court investigation, disciplinary proceedings against Professor Deycke and Professor Klotz will be begun. Dr. Altstaedt demanded personally the institution of such proceedings. To forestall similar tragedies through medical experiments, the senate has passed an ordinance to the effect that, before the introduction of any new procedures by the Lübeck public health service, an opinion as to their indications and usefulness must first be secured from the federal public health service. This ordinance has been strengthened by a resolution adopted by the citizens, which demands a stricter application of federal regulations and an extension of the jurisdiction of the federal public health service. The senate is also requested to make overtures in this direction to the federal government. The citizens adopted another resolution in which they demanded that the inoculated children who survived remain under permanent medical control and that as favorable living conditions as possible be created for them. If circumstances require it, such medical care shall extend to the time when the children come of age, or even beyond. The cost of such care shall be borne by the state, which must likewise compensate the parents for all losses. The number of infants who have died to date (August 1) is sixty-three.

A New Internal Secretion of the Pancreas

At the July 9 session of the Berliner Medizinische Gesellschaft, Professor Frey, chief physician of the University Surgical Clinic, discussed a newly discovered internal secretion of the pancreas. In collaboration with the Willstätters pupil Kraut, Frey succeeded in isolating from the urine a substance which exerts a dilating action on the vessels of the musculature and the skin; also of the heart, the lungs and the brain. This hormone in the circulation was found on investigation to originate in the pancreas. After extirpation of the pancreas, the amount of this substance in the urine decreases markedly. This new hormone, which can be sharply differentiated from insulin, exists in an active and an inactive form in the body. Whereas in the pancreas and the urine it exists in active form, it is found in the blood and the tissues mostly in an inactive form, linked to a second newly discovered substance, likewise inactive. The latter is a polypeptide and it has been obtained in so pure a state that a five millionth gram will counteract the effect of a hormone unit. The relation of the link between the hormone and the inactivator is dependent on the prevailing reaction in the tissues, so that a slight shifting toward the acid side produced by the appearance of acid metabolism products releases a portion of the inactive link between the hormone and the inactivator, whereby the vasodilative action comes into operation. In this alternation between union and releasing of the active substance —which is brought about by a slight change of the hydrogen ion concentration, Frey sees its real physiologic importance, which, in connection with internal secretion, proves the substance to be a genuine hormone. This hormone of the blood stream (manufactured by the I. G. Farbenindustrie under the name of "kallikrein") has been used with success for the past two years as an intramuscular injection for the dilation of the blood vessels. The blood pressure in essential hypertension not caused by the kidneys drops considerably and remains at a lower level after the injections are discontinued. In angina pectoris and especially in intermittent claudication the attacks subside. Amputations that in necrosis and gangrene of the extremities would otherwise have been necessary were avoided owing to the action of the remedy. During the discussion on the address, which was received with great attention and approval, the statements of Frey were confirmed by pharmacologists, internists, surgeons and gynecologists, so that, with all due skepticism toward new therapeutic discoveries, one can look forward with interest to the collective and more extensive observations on the product.

Gift of Rockefeller Foundation to Kaiser Wilhelm-Gesellschaft

The Rockefeller Foundation has granted the Kaiser Wilhelm-Gesellschaft zur Förderung der Wissenschaften the munificent sum of 2,700,000 marks ($642,000), with the express understanding that Prof. Otto Warburg and the physicist Prof. M. v. Laue will be allowed to continue their research in institutes to be specially erected. The institute for Warburg has already been begun; it will bear the name Kaiser Wilhelm-Institut für Zellphysiologie. In this finely equipped institute, this investigator will have an opportunity to continue his research with his pupils in the direction that he has marked out, which, in the field of cancer more particularly, has already been so fruitful of results. It is said that further large sums, derived from a bequest in Germany, will be placed at his disposal for the same purpose. In place of Exzellenz v. Harnack, recently deceased, the physicist Geheimrat Planck was chosen president, July 18, while Professor Becker, formerly Prussian minister of public instruction, was reelected member of the board of control.

Death of Professor Axenfeld

After a short illness, Geheimrat Prof. Dr. Theodor Axenfeld, director of the university eye clinic in Freiburg im Breisgau, died, July 29, at the age of 63. Axenfeld had an international reputation as an ophthalmologist and was an honorary member of numerous scientific societies. Born in 1867, he served as

ordinarius in ophthalmology at the University of Rostock from 1897 to 1900, whereupon he accepted a chair in ophthalmology at the University of Freiburg. Ophthalmology has lost an indefatigable investigator and champion. Axenfeld was the holder of the Lucien Howe medal, which was awarded him by the American Ophthalmological Society in recognition of his eminent services. As representative of the ophthalmology of all Europe, Axenfeld recently participated in a large medical congress at Osaka. The deceased was, for many years, president of the German ophthalmologic society. For more than thirty years he had been editor of the *Klinische Monatsblätter für Augenheilkunde*. His textbook on ophthalmology is popular and is widely used. He was also a collaborator on the Handbuch der Ophthalmologie by Graefe-Sämisch.

Fast Days Disapproved

Addressing recently the Prussian Academy of Sciences in Berlin, Prof. Max Rubner, an authority on the physiology of nutrition, spoke on the connections between constitution and nutrition. He opposed also the present-day rejuvenation endeavors in which abstinence from food plays the chief rôle—the idea of toning up the strength of the body by introducing fast days from time to time—an idea that, for reasons of vogue, has met with general approval. The advocates of such treatment based their conclusions on the assumption that, through abstinence from food, the substance of the body cells, by reason of the low vitality, would break down, and that afterward, through suitable food, fresh new protoplasm could be built up. Rubner, however, explained the actual course of the breakdown of the cellular contents. Not only the cellular protein but also the cellular nuclei lose in substance; only the nuclear body remains until the end of a fasting period. This whole supposed regeneration hypothesis lacks a correct basis. After the end of the period of abstinence from food, the new protein derived from the restored diet is simply attached to the remnants of the old cells, and the new portion of the protoplasm has no different qualities than the old protoplasm. What is needed in the way of new cells is provided by the blood, which is, indeed, completely renewed in a relatively short time.

Gift of Radium

On the occasion of the seventieth birthday of Geheimrat Döderlein, gynecologist, of Munich, a gift of 1.5 Gm. of radioactive substance was made. The grant will serve as a nucleus of a Döderlein institute for radiologic treatment and research, which, on the basis of a merger of the Munich university clinics, is intended to promote radium treatment.

Death of Professor Fürbringer

Geheimer Medizinalrat Prof. Dr. Paul Fürbringer, the Nestor of the Berlin clinicians, died, July 21, aged 81. When he celebrated his eightieth birthday, the writer admired the unusual vigor of the old gentleman, taking an interest in all the progress of medicine, contributing articles to journals or writing books, zealous attendant at medical congresses—he seemed an example of perpetual youth. He was moderate in eating and drinking and kept up regular exercise, thus preserving an astonishing elasticity of gait, and few suspected the advanced age of this slender, active man with silvery white hair. The younger generation knows only from hearsay that Fürbringer, who served from 1886 to 1903 as chief physician of the department of internal medicine in the Krankenhaus Friedrichshain in Berlin, was formerly one of the most popular physicians. His field had been the entire range of internal medicine, but in his later years he devoted himself chiefly to disorders of the reproductive organs. Fürbringer was a man of wide accomplishments. He had received his training at the Pathologic Institute in Jena. He lectured in Heidelberg on pharmacology and medical chemistry; was in Jena extraordinarius for children's diseases and disorders of the skin, and lectured in addition on legal medicine and hygiene. Many monographs and articles in medical journals on the most diverse branches of clinical medicine showed him to be a thorough scholar, and he gave instruction to a large number of pupils who became known as capable practitioners.

TURKEY

(From Our Regular Correspondent)

Ankara, July 29, 1930.

Further Provisions of the New Public Health Law

Every practicing physician is to notify the health department within twenty-four hours and give the name and address of persons sick with any of the following diseases: cholera, plague, typhus fever, typhoid, paratyphoid fever (sick and healthy carriers here included), any kind of food poisoning, smallpox, diphtheria, cerebrospinal meningitis, epidemic encephalitis, bacillary and amebic disentery, leprosy, puerperal fever, glanders, scarlet fever, anthrax, poliomyelitis, measles, recurrent fever or malta fever. To facilitate the reporting of infectious diseases, physicians may avail themselves of notification blanks prepared by the ministry of health and social assistance, which the post office is to dispatch free of charge.

Head physicians of hospitals, superintendents of schools and charitable institutions, proprietors, directors or superintendents of hotels, boarding houses, inns, public baths, offices and department stores, janitors of apartment houses, village selectmen, pharmacists, dentists, midwives, nurses and undertakers, are by virtue of their office or profession obliged to report at once to the authorities concerned the occurrence of any of these diseases.

If infectious disease has occurred or there is the probability that infectious or epidemic disease has been the cause of a death or infectious or epidemic disease is otherwise suspected, government physicians or, when none are present, physicians in the municipal service, are to make all necessary investigations.

If one of these diseases has occurred or is suspected, the following measures are to be taken: Under the supervision of sanitary inspectors the isolation and observation in the homes or in other suitable places of sick persons, suspects and carriers, for the necessary time; the application of serum or vaccine on sick persons or those exposed to the disease; the scientific disinfection of persons, objects, clothing, linen and buildings and all articles that may possibly spread the disease; the extermination of vermin and disease-transmitting animals; in certain localities the medical examination of persons and disinfection of baggage of persons traveling; prohibition of the sale of foods capable of communicating and spreading disease, and the closing of public buildings and premises where an infection or epidemic disease has occurred.

Persons having been bitten by rabid or suspected animals are without loss of time to be sent to the nearest institution for the treatment of rabies. The expense for the transportation of indigent persons is to be covered by the municipal or village chest; in case these chests do not cover the expense, special administrations may avail themselves gratuitously of governmental transportation facilities.

Healthy carriers are, on the decision of the health boards, temporarily and until such time as there is no further danger of transmitting the disease, to refrain from carrying out their profession or occupation.

It is prohibited that cholera, plague and glanders cultures be present in privately owned laboratories or in governmental laboratories other than indicated by the ministry of health and social assistance. For the safe keeping of bacilli of other infectious diseases and precautions to be taken in regard to their transportation, the laboratory proprietors are responsible.

The expense for maintenance of indigent healthy carriers, forcibly isolated, either in institutions or in the home, and of their families, is to be borne by the government.

To prevent the occurrence and spread of infectious diseases the ministry of health and social assistance is authorized at timely intervals to order cleaned and disinfected and have vermin and disease-spreading animals exterminated, under conditions to be published and made known by public notice, of public buildings, conveyances, hotels, inns and other places where people meet, or other institutions which may need it.

The sale of old clothing, furniture and other objects not previously disinfected in a scientific way is prohibited.

In order to help combat and to prevent the spread of disease, proprietors of buildings adjoining a building in which an infectious or epidemic disease has occurred are obliged to carry out the precautions indicated by the health inspectors. In case a proprietor refuses to cooperate, the government or the municipality is to carry out these precautions at his expense.

Within Turkish boundaries, every person is obliged to be vaccinated against smallpox several times. The mode of preparing the vaccine, how vaccination certificates are to be issued, and what persons for scientific reasons are exempt from vaccination are to be indicated in the regulations. Within the first four months, every child born in Turkey is to be vaccinated. The parents are equally responsible for the carrying out of the vaccination obligation. For orphan children, or children not living with their parents, the fosterparents or those in charge of an institution are responsible. Revaccination every five years against smallpox is obligatory for persons up to 30 years of age. In case of a smallpox epidemic all persons indicated by the health officer are subject to revaccination. Smallpox vaccine is prepared in governmental institutions; its distribution and application are gratuitous. Military organizations are obliged, at intervals fixed by law, to revaccinate against smallpox those in the military service. Proprietors of all kinds of commercial or industrial institutions are under obligation, at intervals fixed by law, to have their employees revaccinated.

All kinds of serums and vaccines used for the prevention and treatment of infectious diseases are to be prepared by the government. Imported serums and vaccines have to comply with standards fixed by the ministry of health and social assistance. The production of other human serums and vaccines can be done only with the permission and under the supervision of the ministry of health. Likewise the ministry is to fix standards and conditions of such institutions.

Institutions necessary for the preparation and application of rabies vaccine are to be established by the ministry of health and social assistance or with its permission and under its supervision will be established in connection with, or as part of, a public institution. Vaccination is gratuitous.

Marriages

JOHN E. KOMOROSKE, East Chicago, Ind., to Miss Margaret E. Casey of Evergreen Park, in Hammond, in July.

IRVIN C. BRONSTEIN, New York, to Miss Ella De Lenve Sites of Upper Tract, W. Va., July 31.

MELVIN D. GARDNER, Iowa City, to Miss Florence Semmons of Swisher, Iowa, June 28.

JOHN DAVIS FULLER to Miss Decla Mary Wollenweber, both of Keokuk, Iowa, July 9.

LYNWOOD HEIGES to Miss Frances Charlotte Cuatt, both of Washington, D. C., May 17.

DE VOE O. BOVENMYER, Iowa City, to Miss Margaret Jenkins of Albia, June 28.

JOSEPH LYMAN DOYLE, Parnell, Iowa, to Miss Ellen Brady of Keswick, June 30.

SAMUEL D. PORTER to Miss Betty Davis, both of Omaha, Neb., June 23.

JOHN SHRADER to Miss L. Plaister, both of Fort Dodge, Iowa, July 17.

Deaths

Walter E. Murphy ⊕ Cincinnati; Miami Medical College, Cincinnati, 1897; clinician at his alma mater, 1897-1905; associate professor of laryngology and attending clinician, 1910-1916, associate professor of otology, 1916-1920 and professor of otology, University of Cincinnati College of Medicine since 1920; member of the American Academy of Ophthalmology and Oto-Laryngology; served during the World War; director of the otologic service, Cincinnati General Hospital; on the staffs of the Deaconess Hospital and Good Samaritan Hospital; aged 59; died suddenly, August 4, of cerebral hemorrhage.

Donald Robert Gilfillan, National Military Home, Ind.; Baltimore Medical College, 1903; member of the Massachusetts Medical Society, New England Society of Psychiatry and the American Psychiatric Association; served during the World War; on the staff of the Marion National Sanatorium; aged 50; died, July 29, of pneumonia following an operation for appendicitis.

Walter Eyre Lambert ⊕ New York; L.R.C.P., L.R.C.S. Edinburgh, Scotland, 1884; L.A.H., Dublin, Ireland, 1884; member of the American Ophthalmological Society and the American College of Surgeons; on the staff of the New York Eye and Ear Infirmary; aged 71; died, July 28, at Murray Bay, Que., Canada.

Raymond Lee Latchem, Sioux City, Iowa; Rush Medical College, Chicago, 1911; member of the Iowa State Medical Society and the American Urological Association; served during the World War; on the staffs of the Lutheran Hospital and St. Joseph's Mercy Hospital; aged 44; died, June 22, of cirrhosis of the liver.

Antonio De Bord Young ⊕ Oklahoma City, Okla.; Barnes Medical College, St. Louis, 1895; professor of neurology, University of Oklahoma School of Medicine; member of the American College of Physicians and the Central Neuropsychiatric Association; aged 56; died, June 3, of coronary thrombosis

Frederick Phillip Kreider, Van Wert, Ohio; Fort Wayne College of Medicine, 1893; member of the Ohio State Medical Association; served during the World War; formerly mayor of Van Wert; on the staff of the Van Wert County Hospital; aged 64; died suddenly, July 8, of heart disease.

John D. Buskirk, Shelby, Mich.; Detroit College of Medicine, 1896; member of the Michigan State Medical Society; for twenty years coroner; member of the board of education; aged 64; on the staff of the Shelby Community Hospital, where he died, July 22, of cerebral hemorrhage.

Ernest Herbert Lain ⊕ Lindsay, Okla.; University of Louisville (Ky.) School of Medicine, 1905; past president of the Garvin County Medical Society; served during the World War; aged 51; died, July 15, in the Wesley Hospital, Oklahoma City, following an operation for gallstones.

George H. Wright, Forest Glen, Md.; Medical Department of Columbian University, Washington, D. C., 1884; Hahnemann Medical College and Hospital, Chicago, 1886; member of the Medical and Chirurgical Faculty of Maryland; aged 71; died, July 20, of arteriosclerosis.

Walton Herman Aldrich, Keene, N. H.; Medical Department of the University of the City of New York, 1880; member of the New Hampshire Medical Society; aged 75; died, May 7, in the Eliot Community Hospital, of carcinoma of the mediastinal glands.

Charles William Pfeiffer ⊕ Quincy, Ill.; Keokuk (Iowa) Medical College, 1902; formerly member of the city board of health; for many years on the staff of St. Mary's Hospital; aged 54; died, July 20, in the Barnes Hospital, St. Louis, of acute hepatitis.

Albert Francis Caldwell, Jr., New Bedford, Mass.; Baltimore Medical College, 1896; member of the Massachusetts Medical Society and the Illinois State Medical Society; aged 59; died, May 31, in the Cambridge (Mass.) Hospital, of perforated ulcer.

Walter Price McCall, Ennis, Texas; Memphis (Tenn.) Hospital Medical College, 1894; member of the State Medical Association of Texas; health officer of Ennis; on the staff of the Municipal Hospital; aged 67; died, July 9, of cardiovascular disease.

William John Lowis, Colby, Kan.; Northwestern University Medical School, Chicago, 1904; member of the Kansas Medical Society; served during the World War; aged 53; died, July 9, in Twin Falls, Idaho, of acute appendicitis.

Jeremiah Francis McAvoy, Catasauqua, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1903; aged 56; died, July 7, in the Allentown (Pa.) Hospital, following an operation for acute appendicitis.

Jesse Garvin Carter, Lyman, Miss.; Medical College of Virginia, Richmond, 1918; member of the Medical Society of Virginia; aged 44; died, June 27, in the Baptist Hospital, Jackson, of coronary thrombosis.

Martin Y. O'Brien, Centertown, Mo.; St. Louis College of Physicians and Surgeons, 1897; member of the Missouri State Medical Association; aged 55; died, July 11, in St. Louis, of acute dilatation of the heart.

Charles I. Remington, Walnut Grove, Minn.; College of Physicians and Surgeons, Keokuk, Iowa, 1879; also a druggist; aged 70; died, July 3, of myocarditis, chronic nephritis, chronic prostatitis and pneumonia.

Benjamin Franklin Bennett, Louisville, Ala.; Medical College of Alabama, Mobile, 1893; member of the Medical Association of the State of Alabama; aged 60; died, July 4, of heart disease.

Thomas F. Curry, Philadelphia; Jefferson Medical College of Philadelphia, 1890; aged 71; died, July 3, in the Bryn Mawr (Pa.) Hospital, of intestinal obstruction due to strangulated inguinal hernia.

Julius Noer ✠ Berkeley, Calif.; University of Michigan Medical School, Ann Arbor, 1885; member of the State Medical Society of Wisconsin; aged 72; died, June 26, of carcinoma of the bladder.

Earle C. Mitchell ✠ Chicago; Chicago Medical School, 1920; on the staffs of the North Chicago Hospital and the Illinois Masonic Hospital; aged 49; died, April 7, of chronic myocarditis.

Will Kennett Statler ✠ Oak Ridge, Mo.; Marion-Sims College of Medicine, St. Louis, 1901; served during the World War; aged 52; was found dead, June 2, of carbolic acid poisoning.

Cornelius C. Whelchel, Comer, Ga.; University of Georgia Medical Department, Augusta, 1881; member of the Medical Association of Georgia; aged 76; died, June 5 of coronary occlusion.

Cornelius Edward Hagan ✠ Brooklyn; University and Bellevue Hospital Medical College, New York, 1907; on the staff of the Lutheran Hospital; aged 45; died, July 24, of heart disease.

Calvert Martin De Forest ✠ Brooklyn; Yale University School of Medicine, New Haven, Conn., 1906; served during the World War; aged 48; died, July 22, of heat exhaustion.

James A. Hurst, Walnut Grove, Ala.; Medical College of Alabama, Mobile, 1890; member of the Medical Association of the State of Alabama; aged 65; died, July 6.

Peter Kemp Watters, Watsonville, Calif.; State University of Iowa College of Medicine, Iowa City, 1879; aged 76; died, June 24, of chronic fibrous myocarditis.

William M. T. S. Sims, Columbus, Ohio; Columbus Medical College, 1892; aged 64; died, July 24, in the Grant Hospital, following an operation for appendicitis.

William Edmond Trotti, Jasper, Texas; Kentucky School of Medicine, Louisville, 1894; aged 63; died, June 23, of respiratory paralysis due to cerebral injuries.

Austin L. Bowers, Scott, Ark.; Memphis (Tenn.) Hospital Medical College, 1903; member of the Arkansas Medical Society; aged 53; died suddenly, June 18.

James Riley Dodson, Dossville, Miss. (licensed, Mississippi, 1903); aged 50; died, July 13, in a hospital at Jackson, of an overdose of a sedative.

Florence Scott, San Francisco; University of California Medical School, 1895; aged 55; died, June 20, of cerebral hemorrhage and arteriosclerosis.

Julius A. Parker, Orangeburg, S. C.; Medical College of the State of South Carolina, Charleston, 1907; aged 43; died, July 9, of heart disease.

Romuald A. Krysztafkiewicz ✠ Buffalo; University of Buffalo School of Medicine, 1920; aged 35; died, July 2, of heart disease.

George E. Day ✠ Strasburg, Pa.; Jefferson Medical College of Philadelphia, 1884; aged 68; died, July 9, of heart disease.

Sol Ringolsky, Los Angeles; Gross Medical College, Denver, 1893; aged 69; died, July 12, of myocarditis and chronic cystitis.

Bureau of Investigation

THE TESTIMONIAL INDUSTRY

The Ironized Yeast Company Sends Out a Feeler

Only two or three years ago certain members of the medical profession were asked to answer a question that they were wholly incompetent to answer. The question was whether, in their judgment, the "toasting" process alleged to be applied to the tobacco in "Lucky Strike Cigarettes" was likely to free the cigarets from irritation to the throat. The Lucky Strike concern—or rather, its advertising agents—in distributing the questionnaire also sent the doctors a carton of 100 cigarets! The Lucky Strike people later claimed that over 18,000 physicians answered the question just given in the affirmative. How many thousands of physicians answered the question in the negative or threw the questionnaire in the waste-basket is not of record!

Don't Be Skinny
Gain Pounds of Weight in 3 Weeks with Yeast and Iron—or pay nothing
It seems incredible how fast IRONIZED YEAST adds pounds of good firm flesh—to women and men, children and old people. Doctors know the value of vegetable iron and yeast in building up and improving the body. IRONIZED YEAST, in a highly concentrated form, contains all the blood building properties of vegetable iron with yeast. It will give results in half the time required by yeast and iron taken separately.
IRONIZED YEAST gives you all the weight-building benefits contained in various sickening oils without upsetting the stomach.
New Complexion for You
People ask—what is the magic in IRONIZED YEAST that transforms sallow, lifeless, faded complexions into the fresh, smooth, lovely skin of early girlhood? Wrinkles disappear. Hollows fill out. No wonder thousands of women pour in letters to us in praise of the marvelous, youthifying effects of IRONIZED YEAST!
Yet the answer is simple. Vegetable iron and yeast have been used for years to vitalize the body; to make rich, healthy blood; to improve digestion and bowel action and add weight. In IRONIZED YEAST these two valuable elements are combined in a special formula that is nine times stronger than yeast and iron used separately. That's why IRONIZED YEAST works so quickly. No nasty, pasty taste. Safe to take—pleasant-tasting tablets in a handy bottle.
Try It on "Money-Back" Offer
Go to any drug store and get a full size treatment. If, after this generous trial, you are not delighted with effect, ask for your money back. It will be refunded immediately. If inconvenient to buy from druggist, send $1.00 direct to the IRONIZED YEAST CO., Atlanta, Ga., DEPT.
Skinny, "Lifeless" Women Gain Weight
Gain Pounds of Weight with New YEAST and IRON in 3 Weeks — or Pay Nothing
If we could only show you the wonders that Ironized Yeast has done for thousands of men and women. The hollows that have been filled up with firm flesh, scrawny necks and bony limbs given rounded beauty! Pimples, boils and blotches have disappeared for good.
How Yeast and Iron Builds Quick Weight
Ironized Yeast is two ounces in one—weight-building Yeast and strength-giving Iron. The yeast is the same used in making malt, and which makes malt so beneficial. It is specially cultured yeast, concentrated, to give the utmost in flesh-producing value.
This Yeast is treated with pure, vegetable iron, the same as in spinach, lettuce and celery. In this form Iron is easily assimilated by the body, making rich, red blood and toning up nerves and muscles.
Only when Yeast is ironized in this way is it most effective—for Iron is needed to bring out the weight-building, strengthening values of Yeast. By this special formula Ironized Yeast gives you results in half the time required by yeast or iron taken separately.
Go to your druggist and get a handy bottle of these tasty tablets today. Just a single course of treatment will prove that you can be attractive and healthy. Safe for everybody. They do not upset the stomach nor cause gas or bloating.
Try It on "Money-Back" Offer
Just ask your druggist for a full size treatment. If you are not delighted with the quick results, get your money back. It will be refunded immediately. If inconvenient to buy from druggist, send $1.00 to the IRONIZED YEAST CO., Atlanta, Ga., Dept.
CAUTION! While the amazing health-building value of IRONIZED YEAST tablets has been clearly and positively demonstrated in cases of lack of energy, indigestion, constipation, skin eruptions, poor complexion, and a generally weakened physical and mental condition, IRONIZED YEAST should not be used by anyone who OBJECTS to having weight increased to normal.

Today physicians in the south and possibly other sections of the country are being circularized by a "patent medicine" concern, The Ironized Yeast Company, with headquarters in Atlanta, Ga. "Ironized Yeast" belongs to the get-plump-quick class of nostrums. To quote from some of the Ironized Yeast advertising:

"Don't be skinny, washed out, unattractive."

"Ironized Yeast banishes pimples, blotches, pastiness, sallowness, puts new color in faded cheeks."

"Get lovely, admired curves—a skinny body destroys your charm."

"Only yeast plus iron builds weight—health quick."

"Ends constipation, indigestion, nervousness, clears complexion."

And so on. Ironized Yeast is, as the name denotes, a mixture of yeast with iron. It also contains phenolphthalein. Some work done a few years ago by the state chemists of Connecticut with Ironized Yeast caused them to report that Ironized Yeast was distinctly inferior to brewers' yeast.

This, however, by the way. The circular letter that the Ironized Yeast Company is sending out to physicians at the present time starts out with this rather crude offer: "A GIFT WORTH $10 FOR YOU FOR JUST A LITTLE INFORMATION." The company then asks the physician to answer one or both of the following questions:

"If you have ever prescribed yeast in your practice, for what disorders have you used it? What are your results in prescribing yeast for nervousness due to run-down condition; for constipation? Have you ever taken it yourself?

"Have you ever prescribed yeast plus iron (to be used together), and for what symptoms? What is your opinion of this combination for increasing the appetite, weight, and as a general tonic?"

The physician is asked to write his experience on his own stationery and if he does it, the Ironized Yeast Company promises to send him "a luxurious flaçon of exquisite French perfume—TOUT PARIS DE GUIMET regularly sold at $10."

We called attention in these pages not long ago to the frank purchase of testimonials for another nostrum, "Flaxolyn." In that case the "patent medicine" people paid spot cash for them in amounts running up as high as $850. The Ironized Yeast people evidently think that they can get the same results much more cheaply and get them from real physicians instead of chiropractors, naturopaths, osteopaths, *et hoc genus omne*. Will the medical profession bite?

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Food, Drug and Insecticide Administration of the United States Department of Agriculture

Knoxa Cold Tablets.—The L. J. Barnet Company of Des Moines, Iowa, shipped to Seattle, Wash., in January, 1928, a quantity of Knoxa Cold Tablets that were declared misbranded. The tablets, on analysis, were found to consist essentially of acetanilide, quinine salt, with some powdered crude drugs, including a laxative, resins, traces of aloin, red pepper and some mydriatic alkaloids. The claim that the tablets were a cure for influenza was declared false and fraudulent. The Bartell Drug Company of Seattle appeared as claimant and filed a stipulation for the posting of a surety bond for relabeling the product. In May, 1929, the court ordered that the product be released under bond on the condition that the article be brought into compliance with the federal law.—[*Notice of Judgment 16381; issued December, 1929.*]

Nuremedy.—The Central Laboratories, Inc., of Mount Vernon, Ill., shipped in January, 1929, into Missouri a quantity of Nuremedy that was declared misbranded. When analyzed by the federal chemists, each Nuremedy tablet was found to contain 1.4 grains of phenacetine and nearly 2½ grains of aspirin. One of the allegations of the government officials was that the article was misbranded because it contained such statements as: "Guaranteed to contain no acetanilid," which, they declared, was false and misleading in that the stuff contained phenacetine, which is a derivative of acetanilide and has the same physiologic effect. Furthermore, the packages failed to bear a plain and legible statement of the presence and quantity of acetphenetidin (phenacetine). The therapeutic claims to the effect that it was a remedy for neuralgia, rheumatism, gout, influenza and various other conditions were declared false and fraudulent. In June, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16526; issued March, 1930.*]

Bu-Ku-Jin Elixir.—The Tonkin Distributing Company of San Francisco shipped in March, 1928, to Seattle a quantity of Bu-Ku-Jin Elixir that was declared misbranded. When analyzed, the federal chemists found it to consist essentially of alcohol, sugar and water, with traces of flavoring oils and some plant drug extractives, including buchu. The claim that the preparation was a cure for kidney and bladder disorders was declared false and fraudulent and in March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16384; issued December, 1929.*]

R. P. Liniment.—The Alveo Chemical Company, Inc., Jacksonville, Fla., shipped into Georgia in October, 1928, a quantity of R. P. Liniment that was declared misbranded. The government chemists reported that analysis showed it to consist essentially of volatile oil (97 per cent), including oil of pine. The curative effects claimed on the trade package, in which the product was recommeded for pneumonia, influenza, tonsillitis, headache, rheumatism, neuralgia and various other conditions, were declared false and fraudulent. In May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16378; issued December, 1929.*]

Nue-Ovo.—The so-called Research Laboratories, Inc., of Portland, Ore., shipped into the state of Washington in November, 1928, a quantity of Nue-Ovo which was declared misbranded. The federal chemists reported that analysis showed it to consist of a dark brown watery solution of extracts of plant drugs including a laxative drug, a bitter drug, resin, saponin and caffeine, colored with caramel and preserved with

You and your Rheumatism
—being proof of what many of the suffering folk have found through the use of that wonderful treatment
NUE-OVO
Treatment for
RHEUMATISM
Published by the
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Dr. W. B. Braden, of Seattle, Wash., says:
"I have prescribed your Nue-Ovo in my practice to patients and to my immediate family with great success. I have found the results Far More Certain Than Any Other Treatment Known To Medical Science. My careful investigation has proven that Nue-Ovo is harmless to the most delicate stomach or any part of the human system."
Dr. C. H. Schenk, of Salem, Ore., says:
"I have now had your wonderful herbal remedy "Nue-Ovo" under clinical and general observation for a period of more than two years and I am pleased to say that this remedy has proven all that is claimed for it and much more.
"Its use is universally followed by a general betterment of the individual's health. Its specific benefits in the treatment of Neuritis and kindred ailments has a clinical ratio of 95% benefit in all cases regardless of age. This ratio is somewhat less in complicated cases and somewhat greater in specific Neuritis cases.
"In general practice I regard your remedy directly beneficial in all constitutional deficiencies, evidenced by increased strength, better elimination of wastes, increased circulation, favorable demand for more food and greater ability to get satisfying sleep."
Dr J. A. Beemer, of Astoria, Ore., says:
"Personally I think your treatment is a 'God Send' to suffering humanity."

sodium benzoate. The curative claims, to the effect that it was a remedy for rheumatism of any form, lumbago, neuritis, etc., were declared false and fraudulent. In March, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be released to the Research Laboratories, Inc., upon payment of costs and the execution of a bond conditioned in part that the stuff be relabeled in accordance with the law.—[*Notice of Judgment 16390; issued December, 1929.*]

Pneumatica.—The Charles F. Polk Company of Troy, N. Y., shipped to Waterbury, Conn., in January, 1929, a quantity of Pneumatica that was held to be misbranded. Analysis showed it to consist essentially of petrolatum including red pepper, oil of wintergreen, carbolic acid, camphor and some mydriatic alkaloids. The claims made for this ointment, that it was a remedy for pneumonia, croup, asthma, rheumatism, sciatica, pleurisy and various other conditions, were declared false and fraudulent and in April, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16385; issued December, 1929.*]

Hi-Grade Kold Breakers.—The Continental Drug Company of Alton, Ill., shipped in February, 1929, to Buffalo, N. Y., a quantity of Hi-Grade Kold Breakers that were declared misbranded. Analysis showed the product to contain essentially 1 grain of acetanilide to each tablet, red pepper, extracts of laxative plant drugs including podophyllin, a small amount of

iron salts and sulphates. The claim that it was an effective treatment for influenza was declared false and fraudulent and in May, 1929, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 16383; issued December, 1929.*]

Correspondence

BLOOD TESTS FOR PATERNITY

To the Editor:—The recent Chicago case in which the identification tags of two infants were mixed again makes one inquire what methods are available at present for determining paternity or nonpaternity. As for the determination of paternity, the courts still permit the use of the ancient and notoriously unreliable method of demonstrating similarity of the features of the putative father and the child. In only rare instances is this method justified, however, as when a white woman gives rise to a colored child and the putative father is colored, or when the child and putative father both have six fingers on each hand.

The inheritance of certain physiologic traits may be made use of to prove nonpaternity in certain cases. In order to be applicable in medicolegal cases, such traits must fulfil three requirements: (1) they must be so sharply defined that all qualified observers will reach the same conclusion as to their presence or absence, (2) the traits must be constant throughout life, and (3) they must be inherited according to an exact mechanism. Such characters as the color of the hair, or finger prints, cannot be used medicolegally as they do not fulfil the three prerequisites mentioned. The type agglutinogens of human red blood cells, however, fulfil all the requirements and therefore can be applied to prove nonpaternity in certain cases.

The agglutinogens A and B which determine the four classic Landsteiner blood groups are well known. Their inheritance is now known to depend on three allelomorphic genes, A, B and R, as was first pointed out by Bernstein. How they can be used in special cases to prove nonpaternity is briefly illustrated in the following table:

Groups of Parents	Groups of Children Not Possible
O × O	A, B, AB
O × A	B, AB
O × B	A, AB
A × A	B, AB
A × B	.....
B × B	A, AB
O × AB	O, AB
A × AB	O
B × AB	O
AB × AB	O

More recently Landsteiner and Levine have discovered two additional agglutinogens M and N. Unlike A and B, however, M and N form only three combinations instead of four, for M and N are never absent at the same time from any person's blood. Thus, only three types M + N +, M + N —, and M — N + are possible, and the type M — N — has never been found to occur. How the new agglutinogens M and N may be used in special cases to prove nonpaternity is briefly shown in the following table:

Groups of Parents	Groups of Children Not Possible
M + N + × M + N +	.....
M + N + × M + N —	M — N +
M + N + × M — N +	M + N —
M + N — × M + N —	M + N +, M — N +
M + N — × M — N +	M + N —, M — N +
M — N + × M — N +	M + N +, M + N —

We have examined specimens of the blood of 130 families with 637 children for A, B, M and N by a simplified technic (the results of this investigation are now being prepared for publication). We found only one exception for the inheritance of A and B and two for the inheritance of M and N, all of which we believe attributable to illegitimacy.

The use of the Landsteiner blood groups to prove nonpaternity is now beginning to receive universal recognition, and we believe that M and N can be used in a similar manner. In a case such as the Chicago case, the chances that A, B, M and N together would solve the problem would be one in two, whereas A and B alone give only one chance in four. The reason why blood groups will not always prove of value in a case like this is that in certain instances, as when the parents in both families have the same combinations of agglutinogens, the types of children possible will be the same for the two families.

We presume that A and B have already been used in the Chicago case, or if they haven't been used they certainly should be. If A and B fail to give a conclusive answer, the bloods should also be tested for M and N. Thus, in a case recently reported by François Morei (Les groupes sanguines, *Gaz. d. hôp.* **1**:389-399, 1930) the author was able to differentiate two newborn infants with the aid of the classic Landsteiner blood groups. Had the agglutinogens A and B failed to give a conclusive answer here, tests for the agglutinogens M and N of Landsteiner and Levine would have been indicated.

ALEXANDER S. WIENER, M.D.,
Department of Pathology,
Jewish Hospital of Brooklyn.

PSYCHIATRY IN RELATION TO CRIME

To the Editor:—I have read with considerable interest an article by one of your editorialists in the August 2 issue of THE JOURNAL, entitled "Psychiatry in Relation to Crime." Near the bottom of the first paragraph the following statements occur:

> may equally be labeled mental disease. This conclusion is permissible even when the criminal has shown no evidence of mental disease other than his criminal behavior.

I am aware that many psychiatrists have long urged the acceptance of this view, but I am somewhat surprised that THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION should conform thereto without satisfying its readers by the presentation of reasonably obvious evidence.

Might not this theory be carried to the point of reductio ad absurdum by applying it to any abnormal behavior of any individual; for example, the quack nostrum vender or the absurd cultists? After all, the commission of a crime is merely the extension of such behavior to the point at which it seriously inconveniences individual members of society.

It is my belief that THE JOURNAL feels the same as most physicians who practice practical psychiatry, but the wording of the editorial might be construed literally by the type of lawyer who is eager to search for loopholes in the medical attitude.

ROBERT HOFFMAN, M.D., South Bend, Ind.

GIARDIA INTESTINALIS IN THE KIDNEY

To the Editor:—I read in THE JOURNAL, May 10, the article by Drs. E. W. Ayer and J. M. Neil on the finding of *Giardia intestinalis* in the kidney pelvis, the authors thinking this is the first case recorded.

At the Nov. 19, 1928, session of the Society of Internal Medicine held in Buenos Aires, I communicated in collaboration with others a case (a reprint account of which is attached) in which *Giardia* was found several times in the bladder as a result of ureteral soundings. Therefore I think that our case was the first one recorded.

DRA. TERESA MALAMUD, Buenos Aires.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INCIDENCE OF VENEREAL DISEASE

To the Editor:—Kindly give some data on the incidence of syphilis and gonorrhea in America and Europe. Please quote authorities.

M.D., California.

ANSWER.—Parran and Usilton of the United States Public Health Service published an article in the *American Journal of Syphilis* in April entitled "Extent of the Problem of Syphilis and Gonorrhea in the United States." In the summary they say it is estimated that there are 643,000 cases of syphilis and 474,000 cases of gonorrhea constantly under medical care in the United States. These figures are based on a series of studies in various parts of the United States in communities with a total population of nearly 18 million people, in which statements concerning the prevalence of venereal disease were secured from physicians, hospitals, clinics and other institutions. The figures are also based on the assumption that venereal disease is as prevalent in the whole country as it was in the selected communities. The actual number of cases probably exceeds these figures. For every case of venereal disease that is under treatment there are others which the victims attempt to treat themselves or leave untreated.

Another estimate, made by Mills in a bulletin, published by the Committee on the Cost of Medical Care, seems to have been based largely on the same surveys. Mills says that these studies reveal an average of nearly one case of venereal disease under medical treatment for each hundred people and that if the average rate found by these surveys is applicable to the whole United States there are nearly a million venereal disease cases under treatment on any representative day in the year. It should be emphasized that there are not available for the country as a whole reliable data on which to make an accurate statement as to the total number of cases of either treated or untreated cases.

Following are references to foreign medical literature on this subject:

Machaeras, A.: Decrease in Incidence and Changes in Character of Syphilis in Europe, *Dermat. Wchnschr.* **86**: 605 (May 5) 1928.
Dekeyser, L.: International Statistical Study of Syphilis, *Bruxelles méd.* **8**: 1153, 1191, 1214, 1928.
Gumpert, N.: Stirbt die Syphilis Aus? *Dermat. Wchnschr.* **87**: 1361 (Sept.) 1928.

HEREDITARY LIABILITY TO CANCER

To the Editor:—What should be my advice to a young married couple with regard to their having children, in view of the following cancer history: The husband's mother died of cancer of the breast; the husband's maternal aunt died of cancer of the breast; a daughter of this aunt died of cancer of the breast; the wife's mother died of cancer of the bowel; the wife has had a small tumor (arising in a scar which had been repeatedly abraded) removed which has been microscopically diagnosed cancer by competent pathologists? Please omit name and address.

M.D., China.

ANSWER.—While but little is definitely known concerning the nature of hereditary susceptibility in man, the results of animal experimentation show that it does exist in mice and rats and there are a sufficient number of records of human cancer families to suggest that there may be a similar transmission of susceptibility to cancer. While the offspring of a doubly cancerous family may not necessarily have cancer, they are in all probability much more likely to have it than the offspring of those who have little in their family or cancer on one side only. It would seem wise, therefore, to discourage this couple from having children, as they would probably carry an increased liability to cancer.

VITAMIN F (B_1) in HOME-CANNED TOMATOES

To the Editor:—Will you kindly let me know whether or not vitamin B_1, or F, so called, in other words, that part of vitamin B which is heat-labile, is destroyed in the home canning of tomatoes?

C. S. BAUMAN, M.D., Waterville, Me.

ANSWER.—The distinction between vitamin B (B_1 or F) and the so-called heat-stable factor now designated as G (the pellagra-preventing or antidermatitis vitamin) is of such recent date that few studies are as yet available with respect to the effects of cookery on the now recognized components of the dietary essential originally designated as water-soluble B. However, it has been recognized for some time that when tomatoes are processed in the absence of oxygen in canning processes, vitamins A and B (i. e., F and G) are not appreciably destroyed. There is reason to assume, accordingly, that the B_1 (or F) component also is fairly well preserved. Whether there is greater damage through the procedures of "home canning" will presumably depend on conditions pertaining in the individual household technic. It seems unlikely, in the light of current limited information, that all the antineuritic factor of tomatoes will be destroyed in home canning. Recent studies by Clow and Marlatt (Studies of Vitamin C in Fresh and Canned Tomatoes, *J. Agric. Res.* **40**:767 [April 15] 1930) at the Wisconsin Agricultural Experiment Station have indicated that when the cold-pack method of canning is employed tomatoes retain their vitamin C potency quite well, whereas in canning by the open-kettle method the preservation of this rather labile food factor is less satisfactory.

OXYTOCIC ACTIONS OF DRUGS

To the Editor:—I have on three different occasions prescribed the following:

℞ Bismuth subnitrate .....grs. xv
Methylthionine chloride .....gr. i
Quinine sulphate .....gr. ss
M. ft. Caps.
Sig. Caps., t. i. d., p. c.

In two cases this was prescribed for vomiting of pregnancy and in both cases resulted in a bloody discharge from the vagina after the third capsule. Is this logical or has there been interference? Please omit name and address.

M.D., Toronto.

ANSWER.—Bismuth has been prescribed for decades for all kinds of vomiting and no one ever ascribed oxytocic effects to it.

Methylthionine chloride likewise is not known to have such action.

Quinine has been known to cause abortion but never in such small doses as one-half grain. Of course, one might think of a rare idiosyncrasy, and it is best, therefore, to be always on the safe side, to avoid quinine unless there is a positive indication for its specific action.

Naturally one can never tell whether interference in the uterus has been practiced.

AMAUROTIC IDIOCY

To the Editor:—Can the finding of a bright cherry-red spot occupying the place of the macula lutea, in a milky blue or white area, be interpreted only as being idiopathic for amaurotic family idiocy or can the same pathologic condition be seen in a child, aged 1 year, that was delivered by forceps but at no time showed symptoms of any intracranial hemorrhage?

MORTIMER LIPPMANN, M.D., Brooklyn.

ANSWER.—A cherry red spot as described may be found in cases of occlusion of the retinal vessels. In a child, aged 1 year, without evidence of vascular disease, the overwhelming probability is in favor of amaurotic family idiocy.

GREEN RINGS IN SAUSAGE

To the Editor:—With the advent of hot weather, I have been confronted with a rather peculiar phenomenon in our food department: The pressed ham which is put up in long cylindric containers and which belongs to the general classification of foods known as "bologna" has developed a greenish circle, parallel to the circumference of the slice after it has been cut and standing for awhile. The meat never does this in the winter time. It smells perfectly fresh, tastes good and has been eaten with impunity. The greenish ring, however, is quite noticeable and causes considerable comment and questioning. Several doctors have been consulted and could give no explanation. A salesman of one of the large packing houses, who sold us the meat, suggested that it might be the cereals and spices which were added to the meat and which were oxidized after exposure to the air. I cannot understand, however, if this is the explanation, why it should follow a definite pattern. The ring is about the size of an inverted coffee cup and is parallel to the circumference of the slice about one inch within it. Can you give me an explanation of this and express an opinion as to the advisability of continuing to serve this meat? I have already told the head food matron that in my opinion the meat is thoroughly sound and edible and advised her to continue serving it, but I would like to know the explanation if possible.

J. B. GORDON, M.D., Jamesburg, N. J.

ANSWER.—Green rings in sausage are due to bacterial action on the ingredients used in its production. This applies to the meat, cereals, spices and other substances.

It has been found that many types of bacteria under proper conditions produce hydrogen peroxide or organic peroxides. These peroxides, in the presence of the blood remaining in the meat and of some free nitrates or nitrites which are used in the curing of the meat products, and under slight acidic conditions, will produce a greenish discoloration. This green discoloration

is dependent on the oxygen tension. The oxygen tension in a sausage decreases from the casing toward the center, and the explanation of the ring discoloration is that at this distance from the casing the optimal conditions occur. Temperature naturally influences the development of bacteria and furthers the formation of this discoloration, so that it is probable that in the warmer months this condition may be more prevalent than in the fall and winter.

ASPERMIA

To the Editor:—A man, aged 25, had roentgen treatments for eczematous dermatitis nine months ago. His wholy body was irradiated for three consecutive days, each exposure being from three to five minutes. The genitalia and perineum were irradiated five minutes at each exposure and probably longer, as the genitalia were not covered while the inside of the thighs and the surrounding tissue were being treated. This young man has no children but is desirous of having some. His semen has been examined with the microscope several times, immediately after copulation, but no sperm have ever been found, not even immovable ones. He has never had any venereal disease. Previous to this his wife was pregnant once but the child died in infancy. His desire and erections are the same as ever, and there is no atrophy of the testicles. I should like to know whether the man's sperm cells have been permanently destroyed or whether he will be sterile for only a period of time. If it is temporary, about how long will his sterility last? Please omit name. M.D., Iowa.

ANSWER.—It is not probable that a few irradiations of the duration mentioned should destroy all the intermediate testicular cells, thus producing aspermia. Roentgen-ray sterility in males is as a rule temporary and subsides within a few months after exposure to x-rays once it is discontinued.

MASTOIDECTOMY — NONSURGICAL DRAINAGE OF THE GALLBLADDER

To the Editor:—1. A patient of mine was taken ill with an acute upper respiratory infection consisting of an acute sinusitis (ethmoiditis) and a severe streptococcic sore throat with a temperature ranging about 104 F. Three days following this there was an extension of the process back to the right middle ear with spontaneous discharge and bursting of the right ear drum. Two days later there was bulging of the left ear drum with a resulting myringotomy. Two days later the patient suddenly developed a temperature of 104 with an acute edema of the epiglottis, and the patient was cyanotic and choked. This acute edema of the epiglottis subsided and the patient was sent to the hospital for observation. On admission the patient had a temperature of 104 and discharge from both ears. The temperature gradually receded, and five days later a roentgenogram of the mastoids disclosed clouding of the cells of the antrum. Based on this report, with a temperature gradually subsiding to 101, pulse 72, and absence of tenderness over the tip of the mastoid, a bilateral mastoidectomy was done. Is there any indication for the mastoidectomy at this time? The patient was kept under ether anesthesia for three and one-half hours. Two days following the mastoidectomy, the patient, with a septic temperature, once again developed an acute edema of the epiglottis, this time more marked than the first. Was ether anesthesia indicated in the face of an acute streptococcic sore throat and a previous edema of the epiglottis? Four weeks after discharge from the hospital the left mastoid wound healed beautifully, but the right continues to discharge, and the patient, who, during her entire period of convalescence from the mastoid operation, showed red blood cells, casts and albumin in the urine and was permitted to be up and about, developed an erysipelas of the wound. Is it common or usual for an erysipelas of the mastoid wound to develop five or six weeks following mastoidectomy? Could the erysipelas have been caused at that late date by the patient coming through osculation in contact with one who has been in daily contact with infected abdominal wounds, and streptococcus osteomyelitis? 2. Is the Lyon-Meltzer method for gallbladder lavage indicated in acute catarrhal jaundice? Is it being done by the better gastro-enterologists who are honest with their patients? If acute catarrhal jaundice is due to an infectious process, then is there not great danger of traumatizing, extending the infection, and doing the patient more harm, by Lyon-Meltzer lavage? Please use initials only.
M.D., Brooklyn.

ANSWER.—1. It is hard to say just when a mastoidectomy is indicated in an acute case. However, with well developed pneumatization of the mastoid, extension of the inflammatory process from the middle ear along the mucosa by way of the aditus to the antrum and into the mastoid cells within twenty-four to forty-eight hours has been proved by many postmortem examinations. This, however, does not mean that an operation must be performed. Ordinarily decalcification of the trabeculae does not occur before fourteen to twenty-one days, but there are exceptions to this rule. If, on the other hand, the patient has much pain and marked tenderness of the mastoid process, and especially if high temperature persists after the establishment of free drainage, it is sometimes necessary to operate before two or two and one-half weeks has passed. In this case mere "clouding of the cells of the antrum" does not mean that destruction of the bony partitions has taken place. As long as the temperature was subsiding and there was no tenderness over the tip of the mastoid process, it might have been possible to wait a little longer. However, the general appearance of the patient is an important factor which cannot be evaluated by the description here given. It is difficult to see why a bilateral mastoidectomy required three and one-half hours for completion, unless complications in or about the lateral sinus of one or both sides required extensive surgery. It is quite possible that ethylene might prove a more desirable anesthetic than ether in the presence of a streptococcic sore throat. If ethylene or nitrous oxide was not available, then naturally the otologist had to use ether, but it is doubtful whether that caused any recurrence of the throat condition. Development of erysipelas about the mastoid wound five or six weeks after the operation is certainly not a common occurrence. It is likewise doubtful whether the erysipelas was caused by kissing a person who had been in contact with an infected abdominal wound. It is much more likely due to contact with infected fingers while taking care of the mastoid wound. In some cases, however, erysipelas has been noted in spite of the fact that all precautions regarding asepsis in the handling of wounds was observed.

2. Nonsurgical drainage of the biliary tract is indicated in a number of conditions, some of which may be due to the milder infections. Violent acute inflammations, empyema of the gallbladder, extensive suppurations, gangrene, tumors, impacted stones and some other chronic cases which have resisted all medical treatment are indications for surgical treatment. Subtracting this group of serious cases of cholecystic disease, Simon says, there remains the milder lesions of the biliary tract, namely, the simple catarrhal processes and the low grade attenuated infections, constituting a rather numerous class, many of which are more fully served without surgery.

Lyon and Swalm said in an article in THE JOURNAL, Nov. 14, 1925, entitled "Therapeutic Value of Nonsurgical Drainage of the Biliary Tract," that simple catarrhal jaundice usually clears up promptly in from two to seven days after the obstructive plugs of mucus are removed. The authors discussed the selection of cases for treatment by nonsurgical drainage under fifteen headings. They said that early gallbladder and biliary duct catarrhs, with subinfection, and especially cystic duct obstruction due to catarrh, can often be permanently cleared up and later more serious pathologic conditions prevented. Cholecystitis as a complication of acute infectious fevers will often respond favorably. Again in THE JOURNAL, July 17, 1926, page 196, is a discussion by Dr. G. M. Niles of the results obtained in several thousand nonsurgical biliary tract drainages. Dr. Alexander G. Brown in the *Virginia Medical Monthly* for April, 1926, in discussing this subject said that in cases of obstructive and catarrhal jaundice, relief of jaundice is obtained, elimination of toxemia is hastened, and gastro-intestinal digestive functions are reestablished more quickly.

WASSERMANN TEST ON BLOOD FROM UMBILICAL CORD

To the Editor:—April 6, I had a confinement in which I suspected syphilis. It occurred to me to take a specimen of blood from the mother's side of the cord. The report was Wassermann 4+, Kahn 4+. I have failed to find this procedure of obtaining blood specimens mentioned in the literature. What would be your opinion of the value of this procedure?
J. E. HUGHES, M.D., Indianapolis.

ANSWER.—Dr. Reuben Peterson of Ann Arbor, Mich. (*Am. J. Syph.* **1**:211 [Jan.] 1917) has reported that the results of Wassermann examination of new-born infants by collecting the blood from the placental end of the cord has not proved highly satisfactory, for only a small proportion of children undoubtedly syphilitic give positive tests.

Dr. J. Whitridge Williams of Baltimore (*Bull. Johns Hopkins Hosp.* **31**:355 [Oct.] 1920) found that the Wassermann test on the cord blood in 4,000 deliveries gave thirty-eight, or about 1 per cent, positive reactions. The routine procedure was to clamp the cord between two clamps near the fetal surface, and after severing the cord between them, collect the blood from the maternal end of the cut. If the clamp damaged the vessel so that the blood did not flow, the cord was cut again distal to where the clamp had been. The conclusion was that the information gained was not commensurate with the effort involved.

G. Blumenthal and B. Schwarzmann of the Robert Koch Institute, Berlin (*Med. Klin.* **22**:1530, 1926) have reported the results of examining 791 specimens of retroplacental blood, 471 specimens taken from the arm vein of the mother, and 780 specimens from the umbilical cord of the new-born. Of 45 definitely syphilitic mothers, the Wassermann reaction of arm vein blood was positive in 43 cases and doubtful in the other 2. Of 29 definitely syphilitic infants the Wassermann reaction on the cord blood was positive in 9 cases and negative in 20 infants. Their conclusions were that the tests on the arm vein blood of

the mother during pregnancy and confinement furnish significant results but that the Wassermann reaction of the umbilical cord blood is unreliable and should best be carried out on the vein blood of the babe, at the earliest, six weeks after birth.

G. Chappaz of Rheims (*Gynéc. et obst.* **17**:283 [April] 1928) has reported the results of Wassermann tests of blood taken from the arm vein of the mother, of retroplacental blood, and of blood taken from the placental side of the cord. He is of the opinion that cord blood often gives negative reactions in the presence of syphilis and is deceptive in results.

On the other hand, F. J. Browne of Edinburgh (*J. Obst. & Gynec. Brit. Emp.* **30**:519, 1923) found that the Wassermann test on the cord blood was rarely negative in a child that was itself syphilitic.

P. Trillat and Jean Rousset of Lyons (*Gynéc. et. obst.* **17**:264 [April] 1928) have reviewed, analyzed and criticized much literature on this subject and have reported the results of Bordet-Wassermann tests on 935 specimens of blood taken from the umbilical cord. They obtained 49, or 5.24 per cent, positive reactions. They are of the opinion that a positive Bordet-Wassermann reaction on the blood from the umbilical cord is a strong argument in favor of congenital syphilis and that the test is a valuable procedure.

Dr. J. A. Kolmer (Serum Diagnosis by Complement Fixation, p. 98) observes that the blood taken from the umbilical cord may be anticomplementary and that special care should be given it.

MONGOLIAN IDIOCY

To the Editor:—A young woman of Roumanian Jewish origin gave birth to premature twins, Feb. 6, 1928. The twins lived four hours. The mother was pregnant six and one-half months. June 23, 1929, she gave birth to a male mongolian idiot. The father and mother are physically and mentally normal. There is no history of insanity in the family. The Wassermann blood reaction was negative of both father and mother. The mother wants to have another child. What are the chances of her having another mongolian idiot or abnormal child? What should be done in the way of prenatal treatment, if any; what kind of tests should she and her husband undergo? Please omit name. M.D., New York.

ANSWER.—While mongolian idiocy seems usually to be inherited, it is extremely rare for it to recur in the same family. One of twins may be afflicted, the other healthy. Three cases of duplicate twins with this disease have been reported. It is almost fully safe to advise this mother to have another baby. Since the cause is not known, a rational prophylaxis cannot be prescribed. It has been the habit of some specialists in such and similar cases to administer throughout the pregnancy the old alterative tonics—mercury, arsenic, iodine, iron and calcium.

MECHANISM OF PROSTATIC CONGESTION

To the Editor:—In Queries and Minor Notes, THE JOURNAL, June 14, you answer a question as follows: "The steady use of contraceptive sheaths has been reported as a cause of chronic engorgement of the prostate." Please advise me how. Kindly omit name.

M.D., South Carolina.

ANSWER.—A good many observers have noticed that any appliance or method of action that prolongs the time of cohabitation by retarding ejaculation is apt eventually to produce chronic venous congestion of the prostate with the usual sequelae of such an engorgement. It is supposed that the incomplete evacuation of the organ under such conditions is responsible for the eventually chronic congestion.

PNEUMONOCONIOSIS—PULMONARY HEMORRHAGE

To the Editor:—1. I have a patient who is a mixer of a talcum powder. This powder contains bismuth, boric acid and zinc stearate with medicinal oils. She recently has developed free pulmonary hemorrhage and there has been some question as to whether the constituents of the powder may have been the exciting cause. Is this likely? 2. What percentage of pulmonary hemorrhage is tuberculous in origin? Please omit name.

M.D., Pennsylvania.

ANSWER.—1. The inhalation of mineral dusts over a long period of years is likely to cause pneumonoconiosis—filling of the lung tissues with the dust inhaled. It is conceivable, therefore, that the prolonged inspiration of talcum, which is a silicate, would ultimately load the lung. It is not likely, however, that the talcum would ever cause hemorrhage. Careful physical examination, coupled with roentgen study of the case, should determine whether or not pneumonoconiosis is present. Of more importance would be an examination to determine the presence or absence of pulmonary tuberculosis. It is quite possible that tuberculosis may have antedated the occupation which the patient last followed.

2. When it is noted that Sticker finds 86 per cent of all pulmonary hemorrhages tuberculous, and Penzoldt produces figures which indicate that 99 per cent is close to the truth, one is justified in taking the view of Amrein that all pulmonary bleedings should be considered as of tuberculous origin until proved to be something else. This last is the view, apparently, of American tuberculosis specialists. Whether such a broad opinion is justified or not, it will not result in harm to the bleeding patient provided the physician remembers that tuberculosis is not the only disease in which hemorrhage occurs.

BRONCHIAL ASTHMA

To the Editor:—Will you please outline treatment for the following case: A man, aged 50, has had asthma for the last twenty-five years. He complains of frequent chest colds and constant pain and oppression in the chest near the manubrium sterni. There is dyspnea on exertion, and night sweats occur occasionally. He has not lost weight. The temperature is usually subnormal. The blood pressure varies from 100/70 to 120/70. Roentgen examination is negative for tuberculosis and the condition is diagnosed only as chronic bronchitis. The sputum has repeatedly been negative for tuberculosis. No pathologic changes have occurred in the nose or throat, but the patient often complains of horseness. Asthmatic attacks are diurnal or nocturnal, but especially after exposure to cold or to drinking cold water. Iodides and stramonium cigarets give some relief. Examination shows the anteroposterior diameter somewhat increased and musical râles scattered throughout the chest. Resonance has increased. Would protein skin tests be indicated? If so, in the absence of any suspicion along that line, what proteins should be tried? Please omit name. M.D., Pennsylvania.

ANSWER.—All the symptoms mentioned are quite common in bronchial asthma and the duration of twenty-five years also goes with the diagnosis. Thorough and complete protein skin tests, including pollens, are urgently indicated and may reveal the exciting factor or factors. Incomplete testing is not to be tried, as the very proteins not tested for may be the offending ones.

The pain and oppression in the chest may signify coronary involvement and this should be checked, preferably with an electrocardiogram.

LYMPHATIC SWELLING ON PENIS

To the Editor:—I have a patient who some time ago suddenly noticed a hard, distended, cordlike ridge on the dorsum of the penis. It developed within a couple of days and was not inflammatory in character. It was somewhat spindle shaped and ended at the symphysis pubis. On transillumination it was found to contain fluid, but the sac was so distended that it did not fluctuate. It was also constricted in a few places to small caliber. There were few subjective symptoms (some aching sensation and a sense of stiffness). It remained in that condition for about a week and suddenly disappeared. A few days later a bleb half the size of a small pea appeared on the glans penis. This also disappeared a short time after, and the patient today is in comparatively good health and has had no similar occurrence. What could the condition have been and what could have caused it? Please omit name.

M.D., South Dakota.

ANSWER.—The reported swelling was probably an accumulation of lymph fluid. Such accumulations are occasionally observed following traumatization of the penis.

SALT FREE DIET

To the Editor:—Is there a substitute for salt in cases in which the elimination of sodium chloride from the diet is required?

LAWRENCE SHIELDS, M.D., Xenia, Ohio.

ANSWER.—There are a number of these on the market. They differ chiefly from sodium chloride in containing other acid ions than the Cl ion, though they both contain liberal quantities of sodium ions. In view of our lack of knowledge whether it is the sodium or the chloride ion that is harmful, one could not feel justified in recommending either of these as "salt substitutes."

QUINCKE'S OR BANNISTER'S DISEASE?

To the Editor:—In Queries and Minor Notes, June 14, is a note on "Periodic Swellings, or Quincke's Disease." I know that the rewards of history often go by favor or by luck but I cannot but react at the injustice of the name Quincke's disease. Angioneurotic edema is simply giant hives and is not entitled to the especial importance given it or to have an especial name, but if it is to be designated by any eponym it should be called, at least in America, Bannister's disease. It was accurately described and its character recognized in the *Chicago Medical Review*, June 20, 1880, by Dr. H. M. Bannister, a modest and unusually learned physician of Chicago. The description by Quincke was made in the *Monatshefte für praktische Dermatologie*, Hamburg, in 1882, more than a year later. WILLIAM ALLEN PUSEY, M.D., Chicago.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 2, 1930. Sec., Dr. Harry C. DeVighne, Juneau, Alaska.

ARIZONA: Phoenix, Oct. 7 and 8, 1930. Sec., Dr. H. P. Mills, 14 N. Central Ave., Phoenix, Ariz.

COLORADO: Denver, Oct. 7, 1930. Sec., Dr. W. W. Williams, 224 State Capitol Bldg., Denver, Colo.

CONNECTICUT: New Haven, Oct. 11, 1930. Basic Science. Address State Board of Healing Arts, 1895 Yale Station, New Haven, Conn.

IDAHO: Boise, Oct. 7, 1930. Comm., Hon. F. E. Lukens, Boise, Idaho.

ILLINOIS: Chicago, Oct. 14-16, 1930. Supt., Mr. P. B. Johnson, Springfield, Ill.

IOWA: Des Moines, Sept. 2-4, 1930. Dir., Mr. H. W. Grefe, Des Moines, Iowa.

MICHIGAN: Lansing, Oct. 14-16, 1930. Sec., Dr. F. C. Warnshuis, 1010 Macabee Bldg., Detroit, Mich.

MINNESOTA: Minneapolis, Oct. 7 and 8, 1930. Basic Science. Sec., Dr. E. T. Bell, 110 Anatomy Bldg., University of Minnesota, Minneapolis, Minn.

MONTANA: Helena, Oct. 7, 1930. Sec., Dr. S. A. Cooney, Power Block, Helena, Mont.

NEW HAMPSHIRE: Concord, Sept. 11-12, 1930. Sec., Dr. Charles Duncan, Concord, N. H.

NEW MEXICO: Santa Fe, Oct. 13-14, 1930. Sec., Dr. W. T. Joyner, 20-21 First National Bank Bldg., Roswell, N. M.

NEW YORK: Albany, Buffalo, New York City, Syracuse, Sept. 15-18, 1930. Mr. H. J. Hamilton, State Education Bldg., Albany, N. Y.

OKLAHOMA: Oklahoma City, Sept. 9, 1930. Sec., Dr. J. M. Byrum, Shawnee, Okla.

PORTO RICO: San Juan, Sept. 2-13, 1930. Sec., Dr. Diego A. Biascoechea, P. O. Box No. 804, San Juan, Porto Rico.

RHODE ISLAND: Providence, Oct. 2 and 3, 1930. Dir., Mr. L. A. Round, 319 State Office Bldg., Providence, R. I.

WISCONSIN: Milwaukee, Sept. 10, 1930. Special meeting for reciprocity cases. Sec., Dr. Robert E. Flynn, 315 State Bank Bldg., La Crosse, Wis. Basic Science, Madison, Sept. 20, 1930. Sec., Prof. R. N. Bauer, 3410 Wisconsin Ave., Milwaukee, Wis.

WYOMING: Cheyenne, Oct. 6, 1930. Sec., Dr. H. W. Hassed, Capitol Bldg., Cheyenne, Wyo.

Wisconsin January Examination

Dr. Robert E. Flynn, secretary of the Board of Medical Examiners of Wisconsin, reports the oral, written and practical examination held at Madison, January 14-16, 1930. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Fifteen candidates were examined and passed. Nineteen physicians were licensed through reciprocity with other states and 1 by endorsement of credentials. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Northwestern University Medical School		(1929)	83
Rush Medical College		(1929)	88
Johns Hopkins University School of Medicine		(1927)	85
Harvard University Medical School		(1927) 87 (1928)	85, 87
University of Pennsylvania School of Medicine		(1928)	86
Marquette Univ. School of Med.		(1929) 84, 85, 87 (1930)	86, 87, 87
University of Wisconsin Medical School		(1927) 87 (1928)	90

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery		(1914)	Illinois
Illinois Medical College		(1908)	Illinois
Rush Medical College		(1914) (1919)	Illinois (1929) Oregon
Keokuk Medical College		(1904)	Iowa
State University of Iowa College of Medicine		(1926, 2)	Iowa
Hospital College of Medicine, Louisville		(1897)	Minnesota
Johns Hopkins Univ. School of Medicine		(1920) Md. (1924)	Louisiana
Harvard University Medical School		(1926)	Mass.
Tufts College Medical School		(1905)	Mass.
University of Minnesota Medical School		(1929)	Minnesota
University of Nebraska College of Medicine		(1896)	Montana
Western Reserve University School of Medicine		(1925)	Ohio
University of Wisconsin Medical School		(1927)	Michigan
University of Bonn Faculty of Medicine		(1898)	New York
University of Munich Faculty of Medicine		(1924)	Vermont

College	ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement of
University of Minnesota Medical School		(1928)	U.S.P.H.

Louisiana June Examination

Dr. Roy B. Harrison, secretary of the Board of Medical Examiners of Louisiana, reports the written and practical examination held at New Orleans, June 12-14, 1930. The examination covered 12 subjects and included 100 questions. An average of 75 per cent was required to pass. Seventy-one candidates were examined, 70 of whom passed and 1 failed. Five physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Yale University School of Medicine		(1922)	90.8
Northwestern University Medical School		(1929)	86.6
Tulane University of Louisiana School of Medicine		(1929)	89.5*
	(1930) 85.3, 85.4, 86.4, 86.6, 86.6, 87, 87.1, 87.2, 87.4, 87.4, 87.5, 87.5, 87.5, 87.7, 87.7, 87.7, 87.9, 87.9, 87.9, 87.9, 88, 88.1, 88.1, 88.2, 88.2, 88.2, 88.3, 88.3, 88.4, 88.4, 88.4, 88.7, 88.7, 88.8, 88.9, 89.1, 89.1, 89.1, 89.1, 89.2, 89.4, 89.4, 89.4, 89.5, 89.6, 89.7, 89.9, 90, 90.1, 90.1, 90.3, 90.3, 90.3, 90.4, 90.4, 90.6, 90.7, 90.8, 91.3, 91.3, 91.7, 91.7		
University of Minnesota Medical School		(1930)	85.5
Washington University School of Medicine		(1929)	89.3
Jefferson Medical College		(1930)	86.1
Baylor University College of Medicine		(1930) 90.3,	92.6

College	FAILED	Year Grad.	Per Cent
Memphis Hospital Medical College		(1910)	25.6

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Illinois School of Medicine		(1929)	Missouri
Johns Hopkins University School of Medicine		(1923)	Maryland
University of Buffalo School of Medicine		(1911)	Penna.
University of Oregon Medical School		(1927)	Washington
University of Pennsylvania School of Medicine		(1927)	Penna.

* Temporary permit issued pending completion of citizenship.

Book Notices

THE ADAPTATION OF THE EYE: Its Relation to the Critical Frequency of Flicker. Reports of the Committee upon the Physiology of Vision. By R. J. Lythgoe and K. Tansley. Medical Research Council, Special Report Series, No. 134. Paper. Price, 2s. 6d. net. Pp. 70, with illustrations. London: His Majesty's Stationery Office, 1929.

This deals with experiments, conducted over a period of months on six persons, measuring with the aid of a photometer the frequency of flicker. For the examination, a machine was made from a circular disk with a section removed. This disk was rotated before a known source of light until the impression of a continuous line or complete circle of light was seen by the subject. The critical frequency was noted in flashes per second needed to produce fusion, "a rise" being an increase and a "fall" being a decrease in the number of flashes per second. Measurements were made to determine the brightness of various parts of the spectrum and reaction of the eye when dark-adapted. To secure known intensities of illumination, the patient was placed in a cubical space whose walls measured 152 cm. and contained a square opening subtending an angle of 1 degree at his eye through which the test object was visible. Above the subject's head and beyond his field of vision were three 1,000 and three 60 watt globes. The intensity of light was controlled from outside the cubicle. Various points for fixation were arranged so that the angle between test object and eye could be varied from 10 to 105 degrees. Tests were made in the course of dark adaptation, the dark adapted eye and during light adaptation. The following conclusions were made: 1. The peripheral cones do not give the same responses as foveal cones. 2. The critical frequency due to cones falls during dark adaptation and decreasing levels of light adaptation and is highest when the test object and surroundings have equal illumination. 3. The critical frequency due to rods rises during dark adaptation and with decreasing levels of light adaptation and is highest with completely dark surroundings. 4. The brightness of the surroundings is the most important factor in determining whether the critical frequency relations are of the rod or cone type, bright surroundings encouraging cones and dark surroundings the rods. 5. At intermediate illuminations of test patch and surroundings the frequency is due to part rods and part cones. 6. The results are in good agreement with the performance of the eye in other visual tests. 7. The Ferry-Porter law holds at 10 degrees on the peripheral retina when the brightness of the test object and surroundings is the case. The work contains many graphs and tables. All previous workers' results were open to criticism because of the variable quantities of light and inconstant sources of illumination. In this work, the authors used special care to keep accurate reading of their source of illumination of test object and the eye of the observer and for this reason their report is a contribution of great value.

GONOCOCCAL INFECTION IN THE MALE. By Abraham L. Wolbarst, M.D., Urologist and Director of Urologic Clinics, Beth Israel Hospital. Second edition. Cloth. Price, $5.50. Pp. 297, with 140 illustrations. St. Louis: C. V. Mosby Company, 1930.

In this book the author compiled practically everything that is known about the gonococcal infections in the male. The anatomic and theoretical details are quoted only to a degree of bare necessity, because the author deals with the subject mainly from a practical point of view. While the author lays special stress on applicances and methods that he modified according to his personal views and experiences, the opinions of other authors are also presented in a nonprejudiced manner. Prophylaxis and its results are dealt with in a special chapter. The beginner will find this book a reliable guide and the specialist will receive many interesting suggestions.

LEÇONS DE PHYSICO-CHIMIE: A L'USAGE DES MÉDECINS ET DES BIOLOGISTES. Publiées sous la direction de A. Strohl, professeur de physique médicale à la Faculté de médecine de Paris. Par MM. Blanchetière. Dognon, Fabre, Lescœur, Sannié, Strohl et Wurmser. Paper. Price, 40 francs. Pp. 282, with illustrations. Paris: Masson & Cie, 1930.

The general arrangement and content of the book are excellently suited to its intended use. Descriptions of many biologic applications of physical chemistry will arouse and maintain the interest of those to whom the book is addressed. The numerous explanations of practical laboratory methods will contribute further to the stimulation of interest and create a clearer understanding of important principles. The book is seriously marred by carelessness in the treatment of several important subjects. While modern work on the behavior of strong electrolytes is not entirely ignored, the general treatment of this subject is obsolete. More misleading than the antiquated discussions of methods for the determination of the dissociation of strong electrolytes is the suggested application of the mass law to the results of these determinations. The complete failure of the mass law when applied to the calculated dissociation of such strong electrolytes as sodium chloride and hydrochloric acid is one of the conspicuous facts of physical chemistry. Of some importance are the faults in the methods proposed for the determination of surface tension. Serious errors result from the application of the drop weight method as described. The treatment of the ring method is even more defective. The most startling error is found in a footnote on page 50. Here the reader is informed that passage of electricity through a sodium chloride solution results in a loss of solute by the deposition of chlorine at one electrode and *sodium* at the other. These and other errors have detracted greatly from the value of the present edition. It is to be hoped that any subsequent edition will be submitted to the criticism of a competent physical chemist before it is sent to the press.

A TEXT-BOOK OF PSYCHOLOGY FOR NURSES. By Maude B. Muse, R.N., A.M., Professor in Nursing Education at Teachers College, Columbia University. Second edition. Cloth. Price, $2.50. Pp. 416, with 64 illustrations. Philadelphia: W. B. Saunders Company, 1930.

This book emphasizes the importance of attending to the so-called mental maladjustments of the patient, no matter how trivial these may appear. Routine tasks of feeding, changing dressings, and giving medicines must be supplemented with care for the patient's diversion during convalescence and for the removal of annoying sounds and smells. The early chapters contain a brief summary of neural and glandular mechanisms, with applications to behavior problems. The inhibitory effect of great excitement on gastric motility is pointed out, as is also the need for quiet and peaceful surroundings for the patient with exophthalmic goiter. Though the author warns against the fairy tales of endocrinology, her treatment of the effects of glandular secretions does not have a strictly factual basis. The latter part of the book deals with individual differences and standard tests used for measuring them. These chapters and those dealing with theories of learning should be helpful to the nurse in her work with mothers and children. There are, for example, pointers on teaching care of children to young mothers and on eliminating children's fears. The practical applications to nursing problems and the test questions and exercises at the end of each chapter are the best features of the book.

NOUVEAU TRAITÉ DE MÉDECINE. Par G. H. Roger, Fernand Widal et P. J. Teissier. Fascicule V, Tome II: Le cancer. Par Gustave Roussy avec la collaboration de Roger Leroux et Maurice Wolf. Second edition. Cloth. Price, 100 francs. Pp. 846, with 284 illustrations. Paris: Masson & Cie, 1929.

Accompanying this new treatise on medicine is an announcement of the titles of twenty-two sections ("fascicules"). They cost from 55 to 125 francs each. The plan of the work is similar to that followed in other huge cyclopedias: Ziemssen's, Eulenberg's, the Nothnagel System, the French dictionaries. Some of these sections have undergone two or more revisions. The fifth, of which this work on cancer is volume 2, is the only one so far appearing in two parts. Roussy and Wolf wrote the first edition; in this revision other pupils of Roussy have taken part, notably Roger Leroux. The sections on cancer in the professions and on the frequency of cancer by Roussy and A. Héraux were first published in journals. Mme. Laborde aided in preparing the chapter on treatment, and Vermès assisted the bibliography of about 2,000 references occupying forty-eight pages. These are in groups, each for a separate part of the work. Although this bibliography is huge, it is by no means complete. Only works consulted or actually cited are included. Failure to mention any of the many contributions by Mallory to the subject of tumor is conspicuous.

Following a brief introduction in which definition and modern investigations on cancer are considered, these chapters follow: cancer in the history of medicine; etiology; pathogenesis; pathologic anatomy; pathologic physiology; cancer in animals; experimental cancer; cancer in plants; semeiology; treatment; geographic distribution, and, finally, a chapter devoted to what has been done in various countries in the crusade against cancer. The nucleus of this extensive treatise is the richly illustrated account of the gross and minute anatomy of tumors covering 250 pages, a textbook by itself. For a few tumors the particulars set forth in this chapter are too brief, and this brevity does not accord well with the prevailing excellence of the work. The classification of gliomas recently proposed by Bailey is criticized as being too schematic and as being based on ideas of embryology that are far from being definitely established. Moreover, it is suggested that all or many of the different embryonic phases of cell development are found in different places in the same microscopic preparations, a characteristic not at all peculiar to gliomas. Hypernephromas are of renal origin, the mixed tumors of the parotid gland are not endotheliomas and in the pancreas both acinous and tubular carcinomas are recognized. Bloch's "dopa" (dioxyphenylalanine) reaction distinguishes between melanoblasts and melanophores; only the former make pigment and are dopa-positive. Objection is made to the use by Ewing of the term endothelioma for certain osteogenic sarcomas, and the classification suggested by Oberling is preferred.

Careful reviews of literature on the many topics precede shrewd opinions and summaries that reflect the mature judgment of Roussy. Reading at random from some of these endings of chapters, one learns that cancer is not contagious or hereditary although it is admitted that a disposition to cancer may be inherited. It is a malady common to animals and man, and often curable when localized. Its occurrence in plants has not been satisfactorily demonstrated. It can be produced in animals and transferred from animal to animal. Unlike the inflammatory processes, it results from a combination of known and unknown factors acting conjointly so as to incite disorder in the rhythm of growth and metabolism, troubles not reversible when once started. Cancer is a disease of cells, its *primum movens* unknown. Normal cells, or their progeny, become transformed into cancer cells—cancerization—and with their proliferation, invasion and destruction of healthy tissue, the organism is cancerized. The latter process is partly understood, the former not at all. Cancerization of the organism is essentially biologic, open to clinico-anatomic study and to animal experimentation. The biologic and morphologic features of cancer are diametrically opposed to those of inflammation. What is so far known about immunity to cancer rests on the results of animal experimentation; it is thought to be a tissue immunity. There has been little opportunity to study humoral

reactions, however, the animals used are so small. There may be a natural immunity to cancer as there is to some infectious diseases; there also may be an acquired immunity; but defensive humoral reactions against cancer are unknown; it is impossible to say there is none. Failure to recognize the dissimilarity between inflammation and cancer has hindered investigation of the cause of cancer, and it is a grave error to try to solve problems of pathogenesis and etiology by statistics.

But statements such as the foregoing should be read with the text in which they occur in order to prevent misinterpretations. Another way in which the wealth of this volume may perhaps be apparent from a review is to enumerate the subheadings of the chapter on pathologic physiology of cancer. It contains two parts. Under "La cellule et le tissu cancereux" are morphologic, chemical, physicochemical and physiologic studies of cancer cells and cancerous tissue; in the part devoted to chemical studies, the organic and inorganic constituents, ferments and metabolism are discussed. The second part, "La processus cancereux," is devoted first to the local and then to the general evolution of cancer, metastases, recurrences, independently multiple cancers, general reactions of the organism, modifications of the blood, serologic tests for cancer, and metabolism in cancerous persons and animals. In the careful analysis of factors entering into conclusions that deaths from cancer are increasing are, among others, that more persons live to the "cancer age"; causes for death are more carefully determined than heretofore; more deeply placed malignant tumors are diagnosed, and no material change has been observed in the frequency of cancers of the outside of the body. Mention is made of the facts brought out by Lubarsch regarding postmortem examinations and deaths in Germany in 1920 and 1921, when not more than 5 per cent of the bodies were examined after death and deaths from malignant tumors were found to be 9.2 per cent in the bodies examined. In the returns for all the deaths during the same period, the rate for death from cancer was 3.68 per cent. Wells, a few years later in reviewing conditions at the Cook County Hospital in Chicago, found that a considerable number of clinical diagnoses of cancer were not confirmed by postmortem examinations.

It is of interest to learn that as long ago as 1740 a separate hospital for cancerous patients was established at Rheims; that a society for investigating the cause of cancer was founded in London in 1801. Now there are institutes in many countries supported wholly or in part by government subsidies. In Buenos Aires, for example, the Institute of Experimental Medicine for the Study of Cancer comprises laboratories for experimental work and for pathologic histology, biologic and physical chemistry, a dispensary and a hospital of 150 beds. In the final chapter the roll, country by country, is called of special societies and journals devoted to the investigation, prevention and cure of cancer, a muster most encouraging, for the campaign against cancer is going on in all civilized countries. It ought to be apparent that this work is quite different from the ordinary textbooks on tumors for students and laboratory diagnosticians and from the larger works in libraries generally consulted by physicians and investigators. Its merit is unquestioned. It should be in all medical libraries of any considerable size, private or public, as a work of reference and for the perspective it affords of the stupendous extent and variety of the activities concerned at present with the study of cancer.

DISEASES OF THE NOSE, THROAT AND EAR, MEDICAL AND SURGICAL. By William Lincoln Ballenger, M.D., F.A.C.S. Revised by Howard Charles Ballenger, M.D., F.A.C.S., Associate of the Otho S. A. Sprague Memorial Institute Laboratory of the Children's Memorial Hospital, Chicago. Sixth edition. Cloth. Price, $11. Pp. 1138, with 612 illustrations. Philadelphia: Lea & Febiger, 1930.

This edition is slightly increased in volume by the inclusion of a part on bronchoscopy, together with an augmentation especially with reference to the chapters devoted to the ear. The ear, which in the fifth edition was discussed at the end of the book, constitutes the opening section. The chapters on functional testing of hearing and those on the physiology and functional tests of the labyrinth and inflammatory diseases of the labyrinth have been rewritten in admirable fashion. The second part of the book is devoted to the nose and the accessory sinuses, the third to the pharynx and fauces, the fourth to diseases of the larynx, and the last to bronchoscopy. The various subjects are well covered, virtually all phases being considered from the theoretical and the practical standpoint. The name Rinne is still published as in various other books with an accent over the e as though it were French and not a German name. The concluding chapters on bronchoscopy form a valuable addition. This edition is certainly worth while, for it brings the various subjects in otolaryngology and bronchoscopy down to date. The illustrations are numerous and clearly depict the various operative procedures. The style is clear, and altogether the work is one that deserves the hearty welcome by otolaryngologists that was accorded the previous editions.

HANDBUCH DER PATHOGENEN MIKROORGANISMEN. Herausgegeben von W. Kolle, R. Kraus und P. Uhlenhuth. Lieferung 36, Band II. Agglutination und Agglutinine. Von weil. Prof. Dr. R. Paltauf. Konglutinine. Von Prof. Dr. O. Streng. Bakterienpräcipitation und Bakterienpräcipitine. Von Prof. Dr. R. Kraus. Bakterienenzyme. Von Prof. Dr. C. Oppenheimer. Die Abderhaldensche Reaktion und diagnostische Fermentreaktionen. Von Prof. Dr. E. Küster. Hämagglutination mit Einschluss der Lehre von den Blutgruppen. Von Prof. Dr. O. Thomsen. Third edition. Paper. Price, 30 marks. Pp. 987-1304, with 22 illustrations. Jena: Gustav Fischer, 1929.

The article on agglutinins contains a good description of technic and a clear discussion of the chemical relations of bacterial agglutination. Agglutinative variations are somewhat inadequately treated; there is no reference at all to Andrewes' work on monophasic and diphasic types. The special articles on conglutinins and precipitins will be appreciated by many. In Oppenheimer's article on bacterial enzymes, little attention is paid to American work; important papers by Neill, Fleming, Waksman and others are not even mentioned.

DIABETES: DIRECTIONS FOR TREATMENT BY INSULIN AND DIET. By Benjamin F. Smith, M.D., Physician and Lecturer to St. Joseph's Infirmary, Hermann Hospital, and Jefferson Davis Hospital, Houston, Texas. Cloth. Price, $2. Pp. 223. New York: D. Appleton & Company, 1930.

This is just another patient's manual, except for a list of diets. Good as these diets are, it is debatable whether it is the better part of wisdom to hand a diabetic patient everything on a silver platter. Certainly something can be said in favor of a certain degree of education of the patient.

PHLÉBITES THROMBOSES ET EMBOLIES POST-OÉRATOIRES. Par J. Ducuing, professeur agrégé à Faculté de médecine de Toulouse. Paper. Price, 60 francs. Pp. 478, with illustrations. Paris: Masson & Cie, 1929.

This is an exceedingly painstaking and thorough study based on phlebitis and its sequences appearing in 225 of 3,000 patients after they were operated on for a wide range of diseases by Professor Ducuing at Toulouse. The ratio 10.5 per cent for 1,500 abdominal operations, 6 per cent for 750 operations on the external genital organs and perineum, and 1.8 per cent for 750 operations on the head, neck, thorax and extremities averages 7.5 per cent for the 3,000 operations. All bloodless operations, such as reducing dislocated or broken bones, are omitted. The anatomy and physiology of veins in practically all parts of the body, the pathology of phlebitis and of its sequences, the symptoms, diagnosis and prophylaxis, as well as other forms of treatment, are all discussed minutely with a fine discrimination for orderliness and allotment of space. Throughout the work there are frequent references to published reports and studies by others; the bibliography includes 316 references, and among these are 15 articles by the author alone, or as co-author. Brief reports of the successful surgical removal by Ducuing of emboli lodged in the pulmonary arteries of three patients are included in the discussion of treatment. Twenty-six days after embolectomy, one of the three died; the other two recovered, although resuscitation by carbon dioxide administered intranasally was required during the operation on one of them. There is an opinion prevailing among surgeons, pathologists and internists that both complications, postoperative embolism and thrombosis, occur much more frequently than they did a decade or so ago. The problems of their origin and successful management are extremely baffling. It is likely, therefore, that this monograph will be in demand wherever modern surgery is practiced.

Medicolegal

Damages from Railway Injury and Malpractice Merged

(Keown v. Young (Kan.), 283 P. 511) (Edmondson v. Hancock (Ga.), 151 S. E. 114)

In *Keown* v. *Young*, decided by the Supreme Court of Kansas in January, 1930, the plaintiff, Keown, had been struck by a locomotive. The defendant, Young, was employed to treat him. Keown entered suit against the railroad company that operated the locomotive, but he settled his suit out of court, releasing the company from all claim against it. Then he sued Young, alleging malpractice. Young pleaded that Keown's settlement with the railway company was a bar to action against him, and judgment was rendered in Young's favor. Keown thereupon appealed.

As a general rule, said the Supreme Court, the personal injury of one who has been injured through the negligence of another, and who *uses due care in selecting his physician and in following his instructions*, is attributed by law to the wrongful act or neglect of the one who caused the initial injury, even though that injury is aggravated or a poor curative result obtained through the negligence of the physician; the original wrongdoer is held liable for all the damage. To this, however, there is an exception: even though the person injured uses due diligence in selecting his physician and in following his instructions, yet if that physician through negligence causes a distinctly new injury, the person responsible for the initial injury is not held liable for it; such, for instance, was the case of *Purchase* v. *Seelye*, 231 Mass. 434, 121 N. E. 413, 8 A. L. R. 503, where a railway company by its negligence caused a hernia, and the surgeon through a mistake in the identity of the patient cut him open on the wrong side. When, however, an injured person *is negligent in selecting his physician or in following his advice or instructions*, the original wrongdoer is not held liable for any aggravation of the injury or for a poor curative result that may be due to his malpractice.

The plaintiff in the present case could have recovered in his action against the railway company damages for all injuries sustained by him, those sustained as the result of negligent treatment by his physician as well as those sustained at the railway crossing in the original casualty. Everything that he could have recovered by suit, he settled for with the railway company when he settled his claim out of court. It is fundamental that one who has been paid or who has settled for injuries sustained cannot maintain a second action for such injuries. Cases cited by the plaintiff to show that the release of one wrongdoer responsible for an injury does not necessarily relieve another or others were distinguished by the court from the present case. In some of the cases cited, said the court, the release taken from one wrongdoer specifically reserved to the injured party his right of action against another. In others, even where no specific reservation was made in the release, the court examined the release to see if anything could be gathered from it indicating that the injured party did not intend by it to release any wrongdoer other than the wrongdoer in whose favor the release was executed. There was nothing in the instruments of release executed by the plaintiff in the present case, however, to indicate any reservation on his part of a right to sue any one for any further damages that he had sustained.

The judgment of the court below was affirmed, in favor of the defendant-physician.

In *Edmondson* v. *Hancock*, decided by the Court of Appeals of Georgia, Division 1, in December, 1929, a similar conclusion was reached. Hancock, however, who treated Edmondson after injuries alleged to have been inflicted through the negligence of the railway company, was an agent and employee of the railway company itself. Because of that relation, the court said, the injured person might have recovered from the railway company damages for any injuries resulting from malpractice by Hancock. When Edmondson settled with the railway company and gave it a complete release, the settlement released Dr. Hancock of all liability.

Mastoiditis Attributed to a Fall.—The plaintiff, Hardeman, fell, Dec. 18, 1927, while skating on the ice in an ice rink at Dallas. She was a strong, active and healthy young woman before she fell. Immediately thereafter the left side of her face and her left ear were highly inflamed, and she suffered intense pains in her ear and head. She later developed "erysipelas and mastoiditis, and had an operation performed," but the date of the operation does not appear in the reported decision. Under an accident insurance policy, the plaintiff brought suit against the insurer, attributing her disabilities to the fall. From a judgment in her favor, the insurer appealed to the Court of Civil Appeals of Texas, El Paso. The insurer contended that the mastoiditis from which the plaintiff suffered was caused by "a cold." Medical witnesses expressed the opinion that mastoiditis usually resulted from a cold in the head. They testified that it could not be caused by a traumatism. The physician who operated on the plaintiff, however, qualified his opinion by saying that striking the mastoid with a hammer would certainly cause mastoiditis. The facts, said the Court of Civil Appeals, are sufficient to justify the court in finding that in this case the fall was the cause of the mastoiditis. The judgment of the trial court was therefore affirmed.—*United States Fidelity & Guaranty Co. v. Hardeman (Texas), 22 S. W. (2d) 1112.*

Society Proceedings

COMING MEETINGS

American Academy of Physical Therapy, Boston, October 22-24. Dr. Thomas L. Smyth, 111 North Eighth Street, Allentown, Pennsylvania, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Niagara Falls, Canada, September 15-17. Dr. James E. Davis, 1825 Geddes Avenue, Ann Arbor, Mich., Secretary.

American College of Surgeons, Philadelphia, October 13-17. Dr. Franklin H. Martin, 40 East Erie Street, Chicago, Director-General.

American Hospital Association, New Orleans, October 20-24. Dr. Bert W. Caldwell, 18 East Division Street, Chicago, Executive Secretary.

American Physical Therapy Association, Chicago, Oct. 6-10. Dr. C. C. Vinton, 1650 Broadway, New York, Secretary.

American Roentgen Ray Society, West Baden, Ind., September 23-26. Dr. John T. Murphy, 421 Michigan Street, Toledo, Ohio, Secretary.

Associated Anesthetists of the United States and Canada, Winnipeg, August 28-31. Dr. F. H. McMechan, 770 West Lake Road, Avon Lake, Ohio, Secretary.

Association of American Medical Colleges, Denver, October 14-16. Dr. Fred C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Washington, D. C., Sept. 25-27. Dr. J. R. Kean, Army Medical Museum, Seventh and B Streets, Washington, D. C., Secretary.

Central Association of Obstetricians and Gynecologists, Kansas City and Excelsior Springs, Missouri, October 9-11. Dr. E. D. Plass, University Hospital, Iowa City, Iowa, Secretary.

Colorado State Medical Society, Pueblo, September 9-11. Mr. H. T. Sethman, Metropolitan Building, Denver, Executive Secretary.

Delaware, Medical Society of, Dover, Oct. 14-15. Dr. W. O. La Motte, Medical Arts Building, Wilmington, Secretary.

Indiana State Medical Association, Fort Wayne, September 24-26. Mr. T. A. Hendricks, Hume-Mansur Bldg., Indianapolis, Executive Sec'y.

Kentucky State Medical Association, Bowling Green, September 15-18. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Michigan State Medical Society, Benton Harbor, September 15-17. Dr. F. C. Warnshuis, 148 Monroe Avenue, Grand Rapids, Secretary.

Missouri Valley, Medical Society of the, Des Moines, Iowa, October 15-17. Dr. Joseph D. McCarthy, 107 South Seventeenth Street, Omaha, Secretary.

Nevada State Medical Association, Reno, September 26-27. Dr. H. J. Brown, Box 688, Reno, Secretary.

Oregon State Medical Society, Portland, September 18-20. Dr. F. D. Stricker, 301 Oak Street, Portland, Secretary.

Pacific Coast Oto-Ophthalmological Society, Victoria, B. C., Canada, September 4-6. Dr. Walter F. Hoffman, 817 Summit Avenue, Seattle, Secretary.

Pennsylvania, Medical Society of the State of, Johnstown, Oct. 6-9. Dr. Walter F. Donaldson, 500 Penn Avenue, Pittsburgh, Secretary.

Utah State Medical Association, Salt Lake City, September 9-11. Dr. M. M. Critchlow, Boston Building, Salt Lake City, Secretary.

Vermont State Medical Society, Burlington, October 2-3. Dr. William G. Ricker, 33 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Norfolk, October 21-23. Miss Agnes V. Edwards, 104½ West Grace Street, Richmond, Secretary.

Washington State Medical Association, Bellingham, September 9-11. Dr. C. H. Thomson, 1305 Fourth Avenue, Seattle, Secretary.

Western Branch of the American Urological Association, Los Angeles, September 18-20. Dr. H. W. Howard, 193 Eleventh Street, Portland, Ore., Secretary.

Wisconsin, State Medical Society of, Milwaukee, September 10-13. Mr. J. G. Crownhart, 119 E. Washington Ave., Madison, Executive Sec'y.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

40: 1-226 (July) 1930

Vis Medicatrix Naturae in Pediatrics. J. Brennemann, Chicago.—p. 1.
High Electrical Resistance of Skin of New-Born Infants and Significance. C. P. Richter, Baltimore.—p. 18.
*Influence of Feeding on Certain Acids in Feces of Infants: V. Clinical Considerations. J. R. Gerstley, Chicago.—p. 27.
Enuresis. C. Pototzky, Berlin, Germany.—p. 46. (Translated by H. E. Cohen, New York.)
*Feeding of Premature Infants. M. C. Hill, New York.—p. 59.
*Evaluation of Kahn Reaction in Children. G. Manace, Ann Arbor, Mich.—p. 63.
*Schilling Blood Count in Prognosis of Acute Infections in Infancy and Childhood. J. L. Rogatz, New York.—p. 70.
Osteitis Fibrosa Cystica, Generalized Type with Giant Cell Sarcoma. B. M. Joseph, Jersey City, N. J.—p. 81.
Congenital Pneumothorax: Case. J. Stein, New York.—p. 89.
Open Safety-Pin Swallowed by Ten Months Old Infant Passed Spontaneously per Vias Naturales. D. C. Straus and I. H. Tumpeer, Chicago.—p. 96.
Nephrosclerosis (Chronic Interstitial Nephritis) in Childhood. A. G. Mitchell, Cincinnati.—p. 101.
Hezekiah Beardsley 1748-1790. J. Ruhräh, Baltimore.—p. 146.

Influence of Feeding on Acids in Feces of Infants.—So far Gerstley's studies suggest that changing the quantity of lactose in the formula has more influence on the absorption of food elements from the intestine than on intestinal fermentation. A parenteral infection is more important than any change of lactose in causing diarrhea, increased acidity and weight of the stool. An infant suffering from inanition, increased frequency of stool, increased acid excretion, albuminuria and glycosuria who was fed on cow's milk was greatly improved clinically by the addition of 3 per cent lactose to his diet, and after some weeks the diarrhea tended to diminish. The addition of 12 per cent lactose to cow's milk, thus changing the ratio of lactose to protein to that of breast milk, results in stools that are clinically and chemically not unlike the stools of infants fed on breast milk. In this respect it is interesting to reflect that clinicians have empirically established the same relations in the mixtures made of dilutions of cow's milk with the addition of carbohydrate. An infant given whole cow's milk with 12 per cent lactose for several weeks developed many symptoms of alimentary intoxication, especially a critical drop of weight, but no diarrhea. All of these studies suggest that diarrheal disease in infancy is not due primarily to the indigestibility of cow's milk but rather to the effect of cow's milk on the general body metabolism and nutrition with intestinal involvement as a secondary complication. The severest disturbances occur when a parenteral infection complicates such a disturbance of metabolism.

Feeding of Premature Infants.—A formula used by Hill for feeding premature infants, consisting of three parts of breast milk and one part of evaporated milk, produced an average gain per infant of 0.766 ± 0.11 ounces a day, as compared with 0.336 ± 0.12 ounces in previous years. This reinforcement of breast milk with protein in the form of evaporated milk and the use of passive exercise in the care of premature infants are presented, because the results obtained were more constant than any heretofore tried out at Bellevue Hospital. The mortality rate was unaffected in hospital cases. All deaths were due to intercurrent respiratory infections. In the six cases observed in private practice during the same period there were no deaths.

Evaluation of Kahn Reaction in Children.—In a series of 1,981 Kahn tests performed by Manace on children, there was apparently clinical and serologic agreement in 1,927 (97.3 per cent) nonsyphilitic cases and in 39 (1.9 per cent) syphilitic cases, making a total agreement in 1,966 cases (99.2 per cent). The various pathologic (nonsyphilitic) conditions in which negative Kahn reactions were obtained include medical, surgical, otologic, ophthalmologic, dermatologic and neurologic cases. No false reactions were obtained in the febrile conditions. The presumptive procedure carried out in conjunction with the regular Kahn test is of value as a serologic check but does not apparently possess the specificity of the regular test. When a positive family history of syphilis is given or when there is indefinite history or stigma, Manace says the investigation should be prolonged in the form of repeated serologic examinations before the infection can be established or definitely ruled out.

Schilling Blood Count in Prognosis of Acute Infections in Childhood.—Rogatz makes a preliminary report of the Schilling blood count done in a series of twenty-six cases, of which twenty-three were pathologic conditions. The patients were between 5 weeks and 11 years of age, but a majority were under 1 year. The underlying theory is briefly reviewed; the procedure is described, and a short description of the important juvenile and stab cells is given, with photomicrographs to enable their differentiation. The hemogram and shift curve are explained, and ten cases illustrating significant points are followed with their respective hemograms in detail. Shift curves, corresponding to two of the more protracted cases, are presented. Rogatz feels that the Schilling blood count is of greater value than the ordinary differential smear in supplementing and interpreting the clinical picture of acute, pathologic conditions in infancy and childhood. It may be of assistance in the differential diagnosis. When repeated at frequent intervals during an infection, the Schilling hemogram reflects the progress of the patient and has been repeatedly shown to anticipate the appearance of a complication, improvement or other change in the body by twenty-four hours or more. It is therefore of definite value in immediate prognosis. If further reports bear out its apparent validity, this type of count should replace the ordinary differential count in routine hospital work and in private practice.

American Journal of Pathology, Boston

6: 381-498 (July) 1930

Tissue Reactions in Rabbits Following Intravenous Injection of Bacteria. R. N. Nye and F. Parker, Jr., Boston.—p. 381.
Periarteritis Nodosa: Five Cases, One Histologically Healed. A. Arkin, Vienna, Austria.—p. 401.
*Primary Sympathicoblastoma of Skin of Thigh. V. C. Jacobsen and K. Hosoi, Troy, N. Y.—p. 427.
Silver Staining of Endoneurial Fibers of Cerebrospinal Nerves. G. F. Laidlaw, New York.—p. 435.
Further Modification of Del Rio-Hortega's Method of Staining Oligodendroglia. W. Penfield, Montreal, Canada.—p. 445.
*Results Following Intrarenal Arterial Tuberculin Injections in Normal and Tuberculous Monkeys, Goats and Swine. E. R. Long, C. B. Huggins and A. J. Vorwald, Chicago.—p. 449.
*Marked Dilatation of Left Auricle of Heart: Case. E. A. Burkhardt, Jr., New York.—p. 463.
Brain of Craniopagus. K. Löwenberg, New Haven, Conn.—p. 469.
*Congenital Aneurysm of Interventricular Septum: Two Cases. D. E. Cannell, Toronto, Canada.—p. 477.
*Renal Lesions with Retention of Nitrogenous Products Produced by Massive Doses of Irradiated Ergosterol. T. D. Spies and E. C. Glover, Boston.—p. 485.

Primary Sympathicoblastoma of Skin of Thigh.—Jacobsen and Hosoi report a case of sympathicoblastoma, primary in the skin or subcutaneum of the thigh of a 9 months old infant. There was a recurrence in the same location within six months. So far as they have been able to determine, this is the only instance of a sympathicoblastoma occurring in such an unusual location. At present, almost two years after the removal of the recurrent tumor, the child is vigorous, robust and apparently normal in every respect.

Intrarenal Arterial Tuberculin Injections in Normal and Tuberculous Monkeys, Goats and Swine.—Long et al. state that distinct renal allergic responses were secured on the injection of tuberculin protein into the renal arteries of tuberculous monkeys, goats and swine. The allergic nature of the response was established by the fact that similar injection into

normal controls did not cause injury (except such as occurred from vascular occlusion). In the monkeys the lesion produced was purely degenerative, in the goats chiefly degenerative but occasionally inflammatory, and in the swine degenerative and of a more inflammatory character than in the goats. The inflammation in the goats and swine took the form of an interstitial nephritis. The glomerular changes observed in a former investigation in which larger dosage of tuberculin protein was used were not produced. The intensity of renal tuberculin reaction did not parallel the intensity of cutaneous reaction in this series of animals.

Marked Dilatation of Left Auricle of Heart.—The case reported by Burkhardt was discovered at the necropsy. There was stenosis of the mitral and aortic valves, hypertrophy and marked dilatation of the left auricle, and a mural thrombus of the left auricle.

Congenital Aneurysm of Interventricular Septum.—The two cases with congenital aneurysm of the interventricular septum reported by Cannell were discovered at the necropsy. The absence of clinical signs and symptoms in both cases, wherein marked distortion of the normal anatomy was present, is remarkable. A critical study of cases adds further evidence in favor of these anomalies being congenital malformations rather than the terminal results of endocarditis.

Renal Lesions with Retention of Nitrogenous Products Produced by Massive Doses of Viosterol.—Spies and Glover noted that the administration of massive doses of viosterol to rabbits caused marked histologic changes in the kidneys. The chief changes were sclerosis and hyalinization of the vessel walls, and thickening of the basement membranes of the tubules and glomerular capsules, accompanied in both by extensive subepithelial deposits of hyalin. There was abundant deposition of calcium in these localities. Pronounced atrophy of the tubular epithelium also occurred. The kidney lesions were accompanied by the appearance of large amounts of albumin in the urine and by retention of nitrogenous products in the blood. The degree of nitrogen retention was in general proportional to the amount of kidney damage as evidenced by histologic examination.

American J. Physical Anthropology, Philadelphia

14: 133-329 (April-June) 1930

Critique of Professor Osborn's Theory of Human Origin. W. K. Gregory, New York.—p. 133.
Growth of Infant Female Gorilla. C. V. Noback, New York.—p. 165.
Cavum Nasi of American Negro. C. M. Charles, St. Louis.—p. 177.
Age Changes in Pubic Bone: VIII. Roentgenographic Differentiation. T. W. Todd, Cleveland.—p. 255.
Nasal (Nasion-Akanthion) Height as Criterion of Race. J. Cameron, Halifax, Nova Scotia.—p. 273.
Relation of Cranial Module to Capacity. S. H. Sankas.—p. 305.
Mental Fossae. E. Hrdlička.—p. 317.

American J. Roentgenol. & Radium Ther., New York

24: 1-112 (July) 1930

*Colon Studies: VI. Cecal Stasis: Clinical Significance and Relation to Proximal Colon Stasis. J. L. Kantor, S. Schechter and J. A. Marks, New York.—p. 1.
Interpretation of Sinus Roentgenograms. G. W. Grier, Pittsburgh.—p. 21.
Pseudofractures (Hunger Osteopathy, Late Rickets, Osteomalacia): Case. L. A. Milkman, Scranton, Pa.—p. 29.
Anomalous Enlargement of Liver and Dissecting Hematoma of Phrenic Nerve. K. Kornblum and G. W. Stephenson, Philadelphia.—p. 38.
Reaction of Lymphoid Tissue to Roentgen Radiation. H. Akaiwa and M. Takeshima, Okayama, Japan.—p. 42.
Complications in Urinary Tract Due to Carcinoma of Uterine Cervix or Radiation Treatment. H. Schmitz, Chicago.—p. 47.
*Results Obtained in Treatment of Carcinoma of Cervix Uteri with Radium and Roentgen Rays from 1915 to 1923, Inclusive. H. H. Bowing, A. U. Desjardins, L. J. Stacy and J. H. Bliss, Rochester, Minn.—p. 54.
Carcinoma of Ovary: Three Cases Treated by Deep Roentgen Therapy. A. W. Jacobs, New York.—p. 63.

Significance of Cecal Stasis and Relation to Proximal Colon Stasis.—Cecal stasis proper occurred in 27 per cent of 959 cases studied by Kantor et al. Its chief clinical associations are with low cecum (slight), right lower quadrant pain (fairly marked), ileac stasis (fairly marked), and appendix stasis (fairly marked). Appendectomy does not diminish the incidence of this condition. Cecocolic stasis occurs rarely (less than 1 per cent) as a primary condition. When associated with constipation (stasis in the colon distal to the hepatic flexure) its incidence is 10 per cent. In this form its chief clinical associations are with low cecum (fairly marked), right lower quadrant tenderness (slight), constipation (very marked), vomiting and headache (marked), and advanced appendix stasis (marked). Appendectomy does not diminish the incidence of this condition. Cecal stasis is a condition of relatively minor importance. Cecocolic stasis when associated with constipation is more likely than cecal stasis to give symptoms of clinical significance. Cecocolic stasis in its primary form (i. e., not associated with constipation) is encountered so seldom that its clinical meaning cannot as yet be established by the statistical method employed in these studies. Neither cecal stasis nor cecocolic stasis seems capable in itself of causing disorders of marked clinical importance. Thus, when these forms of retention occur in the presence of normal or high cecums, symptoms are relatively uncommon. When they occur in the presence of a low placed cecum, symptoms are much more frequent. This evidence seems to favor the view that the symptomatology in many of these cases may be due to the effect of the colon dragging on adjacent organs (possibly the duodenum) rather than to absorption from within the proximal large intestine. It seems reasonable to conclude from this investigation that the treatment of right colon stasis should be directed primarily toward the restoration of colon function by such procedures as the relief of constipation, by antispasmodics, and by fattening the patient. If such conservative measures fail, it is possible that surgical intervention may prove useful. Appendectomy is definitely worthless as far as correcting cecal stasis is concerned. The release of constricting bands and some form of cecocolic elevation or fixation are procedures that appear worthy of consideration. Careful selection of cases and control by preoperative and postoperative study are most desirable.

Treatment of Carcinoma of Cervix Uteri with Radium and Roentgen Rays.—In the 9 year period stated by Bowing et al., 981 cases of carcinoma of the cervix uteri were treated by means of irradiation. The immediate and late results are gratifying when compared with the results obtained with the previous surgical methods. Further, the lack of the mortality and morbidity features attending operations in this field makes the treatment all the more acceptable. Irradiation has brought about much palliation in practically all cases treated and has saved one third of the patients for a period of three years. Experience in this field of treatment warrants the statement that better results will be possible in the future, especially if it is possible to see patients soon after the onset of the disease. Periodic general examination should do much to bring about this desirable feature in the management of cases of carcinoma of the uterine cervix.

Archives of Internal Medicine, Chicago

46: 1-164 (July) 1930

Frequent Chest Colds. I. C. Walker and J. Adkinson, Boston.—p. 1.
Blood Pressure in Six Thousand Prisoners and Four Hundred Prison Guards. W. C. Alvarez, Rochester, Minn., and L. L. Stanley, San Quentin, Calif.—p. 17.
*Metabolism of Obesity: VII. After-Effect of Muscular Exercise on Production of Basal Heat. C. C. Wang, S. Strouse and E. Smith, Chicago.—p. 40.
Metabolism of Normal and Leukemic Leukocytes. E. C. Glover, G. A. Daland and H. L. Schmitz, Boston.—p. 46.
Diffusible Calcium and Proteins of Blood Serum in Malignant Diseases. L. Gunther, Los Angeles, and D. M. Greenberg, Berkeley, Calif.—p. 67.
Diffusible Calcium of Blood Serum in Allergic Diseases. D. M. Greenberg, Berkeley, Calif., and L. Gunther, Los Angeles.—p. 72.
*So-Called Malignant Hypertension. F. D. Murphy and J. Grill, Milwaukee.—p. 75.
*Primary Carcinoma of Liver. G. F. Strong and H. H. Pitts, Vancouver, Canada.—p. 105.
*Chronic Arthritis. H. M. Margolis and A. H. E. Dorsey, Rochester, Minn.—p. 121.
Lipoid Nephrosis. P. F. Shapiro, Chicago.—p. 137.

Effect of Muscular Exercise on Production of Basal Heat.—A total of forty-one experiments consisting of four tests each were conducted by Wang et al. on thirty-five women, thirteen of whom were obese, fifteen normal and seven underweight. The average values for the production of heat fifteen minutes after muscular exercise were +6.5, +3.1 and +6.8 per cent above the basal value for the obese, normal and under-

weight subjects, respectively. The corresponding values thirty minutes after the exercise were +0.9 and +0.8 and −0.1 per cent. The lowered production of heat after exercise was accompanied by a lowered respiratory quotient.

So-Called Malignant Hypertension.—Sixteen cases of malignant hypertension are analyzed by Murphy and Grill. Of the sixteen patients, thirteen died and on twelve autopsy was done. Clinically, the chief observations were headache, a profound loss of weight, a persistent excessive hypertension, functional failure of one or more essential organs, a progressively downward course and a rapid termination. A characteristic retinopathy was present in all cases. Histologically, the essential lesions were arteriosclerotic. The smallest arteries and arterioles were almost universally involved. In six cases, necrotic lesions had developed in the walls of the afferent glomerular arterioles and in the loops of the corresponding glomeruli. Hypertrophy of the media of the arterioles of the skeletal muscles was usually found. In the arterioles of the kidneys and other organs, medial hypertrophy was found occasionally, in association with arteriosclerotic changes. The clinical and morphologic observations on malignant hypertension differ from those on hypertension of benign form only in degree. Greater severity of the clinical symptoms and a more extensive and destructive form of lesion of the smallest arteries and arterioles are characteristic of malignant hypertension.

Primary Carcinoma of Liver.—Nine cases of primary carcinoma of the liver are reported by Strong and Pitts. Eight of these occurred in Chinese. These Chinese came entirely from Kwantung, a southern province of China, where liver fluke, *Clonorchis sinensis*, is common, and where chronic diseases of the liver frequently occur.

Chronic Arthritis.—Nonhemolytic streptococci were isolated by Margolis and Dorsey from the epiphyseal marrow and bone, from the synovial membrane and from the cartilage obtained from joints affected with chronic nongonorrheal arthritis. The synovial fluid from these cases did not yield organisms other than those from occasional contamination. The epiphyseal marrow and bone yielded bacteria more frequently than any of the other tissues. This may indicate a significant site of infection in the pathogenesis of arthritis which has not been given sufficient consideration in the past. Cultures of control tissues from joints other than those of nongonorrheal arthritis yielded organisms other than streptococci. These could be ascribed either to secondary infection or to accidental contamination. Several of the streptococci isolated from arthritic tissues showed marked elective affinity for joints when injected intravenously into rabbits. One diphtheroid which was similarly injected did not localize in the joint. The relative infrequency with which organisms were grown from arthritic tissues is probably due to the long duration or inactivity of the disease when the material became available for study. The negative cultures from tissues of the joints are not proof of the noninfectious nature of the disease; the presence of bacteria, even in a small percentage of cases, is strongly suggestive of infection in the etiology of chronic arthritis. The nonhemolytic green-producing and indifferent streptococci seem to be of first etiologic significance in chronic arthritis, in confirmation of the previous work of Rosenow and others.

Archives of Ophthalmology, Chicago

4: 1-164 (July) 1930

Some Practical Procedures Used by Dr. Harold Gifford. S. R. Gifford, Chicago.—p. 1.
Salzmann's Nodular Corneal Dystrophy: Report of Case. D. Katz, Chicago.—p. 16.
Measurement of Limbus in Chinese Eyes. W. P. Ling, Peiping, China.—p. 22.
Cyclic or Rhythmic Oculomotor Paralysis. E. Selinger, Chicago.—p. 32.
Size of Objects in Relation to Visibility and Rating of Vision. C. E. Ferree and G. Rand, Baltimore.—p. 37.
Ocular Movements. C. D. Verrijp, Leiden, Holland.—p. 73.
Anomalies of Accommodation. T. D. Allen, Chicago.—p. 84.
Obscure Sympathetic Phenomena: Two Cases. G. L. Johnson, Durban, South Africa.—p. 90.
Exfoliation of Most Superficial Lamella of Anterior Capsule of Crystalline Lens. D. B. Kirby, New York.—p. 93.
Chemical and Immunologic Researches on Lens Protein. A. C. Woods, Baltimore.—p. 96.

Arch. of Physical Therapy, X-Ray, Radium, Chicago

11: 327-384 (July) 1930

Physical Therapy for Industrial Injuries: Is It of Economic Value? J. E. M. Thomson, Lincoln, Neb.—p. 327.
Treatment of Ultraviolet Burns Including Sunburn. A. P. Evans, New York.—p. 331.
Radium as Therapeutic Agent. C. J. Broeman, Cincinnati.—p. 333.
Physical Treatment of Results of Septic Dissemination. F. H. Morse, Boston.—p. 340.
Nonvolatile Anesthesia in Electrosurgery: Intravenous Somital. E. N. Kime, Indianapolis.—p. 343.
High Frequency Currents in Treatment of Cancer. H. H. Bass, Durham, N. C.—p. 347.

Arkansas Medical Society Journal, Little Rock

27: 19-48 (July) 1930

Late Toxemias of Pregnancy. M. E. Davis, Chicago.—p. 19.

California & Western Medicine, San Francisco

33: 465-544 (July) 1930

Deep Mycoses in Surgical Aspects: Rôle of Laboratory Diagnosis. F. D. Weidman, Philadelphia.—p. 465.
Pulmonary Hemorrhage. E. Bogen, Los Angeles.—p. 473.
Safety Measures in Practice of Urology. C. P. Mathé, San Francisco.—p. 480.
Acute Intestinal Obstruction: Diagnosis by Flat Roentgen Film. M. H. Rabwin and R. A. Carter, Los Angeles.—p. 483.
Lymphoblastoma Involving Stomach: Roentgenologically Considered. H. E. Ruggles and R. S. Stone, San Francisco.—p. 486.
Varicose Veins: Treatment by Injection of Sclerosing Solutions. T. O. Burger and H. G. Holder, San Diego.—p. 490.
Traumatic Rupture of Kidney. E. W. Beach, Sacramento.—p. 494.
Pyocyanic Angina with Agranulocytosis. M. J. Keeney, Los Angeles.—p. 502.
Business of Medicine. R. Brown, Santa Barbara.—p. 505.
Sixteenth Century German Medicine: Artzneybuch of Hofmedicus Gäbelthouer. S. L. M. Rosenberg, Los Angeles.—p. 508.
Spontaneous Rupture of Spleen Following Malaria Therapy for General Paresis: Case. E. W. Twitchell, San Francisco.—p. 512.

Canadian Medical Association Journal, Montreal

23: 1-134 (July) 1930

Intestinal Obstruction. A. Primrose, Toronto.—p. 1.
Use and Abuse of Vaccines and Serums. D. G. Campbell, Montreal.—p. 10.
Review of Methods of Diagnosis and Treatment of Sterility in Female. M. C. Watson, Toronto.—p. 17.
Cause of Right-Sided Abdominal Pain in So-Called Chronic Appendicitis. W. A. Bigelow, Brandon.—p. 22.
Interrelation of Diseases of Nose and Throat and Those of Nervous System. G. W. Howland, Toronto.—p. 24.
Nervous Indigestion and Colon. P. M. MacDonnell, Kingston.—p. 28.
Nontuberculous Bronchopulmonary Infection from Internist's Point of View. R. L. Hamilton, Sayre, Pa.—p. 30.
*Clinical Manifestations of Acute Leukemia. N. B. Gwyn, Toronto.—p. 35.
Three Primary Malignant Epithelial Tumors of Anorectal Region Occurring in One Person. D. M. Angevine, Montreal.—p. 38.
*Congenital Diverticula in Greater Curvature of Fundus of Stomach. W. B. Allan, Montreal.—p. 43.
*Hypersensitiveness to Quinine. J. F. Burgess and B. Usher, Montreal.—p. 45.
Prevention of Congenital Syphilis. E. J. Trow, Toronto.—p. 48.
Goiter and Relationship to Industry. C. K. P. Henry, Montreal.—p. 51.
Pleural Shock. D. Prendergast, Toronto.—p. 54.
Scarlet Fever. E. F. Taylor, Winnipeg.—p. 56.
Massive Scrotal Hernia. L. J. Adams, Montreal.—p. 58.
Death on Operating Table from Status Lymphaticus. C. C. Stewart, Montreal.—p. 59.
Full-Time Extra-Uterine Pregnancy. L. D. Wilcox, Brantford.—p. 60.
Undulant Fever in Province of Quebec: Two Cases. M. R. Stalker, Ormstown, Que., and J. B. Ross, Montreal.—p. 62.

Clinical Manifestations of Acute Leukemia.—Gwyn reports three cases of acute leukemia, with little in the way of throat symptoms, but whose course of illness and blood pictures seemed to make the diagnosis of acute leukemia quite certain. In one the onset was with acute renal pain and hematuria. In the second case the onset was sudden with cerebral symptoms. In the third case symptoms of arthritis were the earliest manifestation.

Congenital Diverticula in Greater Curvature of Fundus of Stomach.—The case reported by Allan was one of a true congenital diverticulum of the stomach, appearing in an unusual situation in the greater curvature of the fundus of the stomach, and was a purely accidental finding at necropsy.

Hypersensitiveness to Quinine.—Burgess and Usher believe that an increasing number of cases of mild to severe eczema of the face are occurring, associated with and due to a

sensitization to certain alcoholic after-shave lotions, in some cases necessitating hospital care. A study of 200 persons, as seen in the dermatologic clinic of the Montreal General Hospital, showed that an idiosyncrasy to quinine, and therefore to lotions containing quinine as a denaturant, is not common. A study of specially investigated cases of dermatitis from after-shave lotions shows that: (1) individuals become sensitive to alcoholic after-shave lotions by repeated contact over varying periods of time; (2) in all cases one ingredient only is the cause of this eruption, namely, quinine; (3) in certain cases a general hypersensitivity of the skin would appear to be acquired; in a number of cases, again, a local hypersensitivity alone occurs. In no case have they been able to show a hypersensitivity to a lotion containing colocynth as a denaturant. On account of the widespread use of alcoholic after-shave lotions it is felt that, from the standpoint of public health, the present use of quinine in such lotions is to be deprecated, and some other substance should be used which does not cause irritative and later eczematous conditions in the skin.

Journal of Industrial Hygiene, Baltimore

12: 223-258 (June) 1930

Personal Qualities in Accident Causation. E. G. Chambers, London. —p. 223.
Total Heat Difference as Measure of Wet Kata Cooling. W. S. Weeks, San Francisco.—p. 233.
Infectivity of Silicotic Tuberculosis. P. Heffernan.—p. 236.
Occurrence of Pulmonary Fibrosis and Pulmonary Affections in Asbestos Workers. E. R. A. Merewether.—p. 239. C'cn.

Journal of Lab. & Clin. Medicine, St. Louis

15: 943-1054 (July) 1930

Blood-Urea Clearances: Diuresis in Normal and Nephritic Animals. R. L. Johnston, Cleveland.—p. 943.
*Incidence of Lipoids in Urine of 1,470 Specimens. A. T. Brice, Jr., Florence, S. C.—p. 953.
Mercury Poisoning: Clinical Difficulties and Pathogenesis: Two Cases of Brown Sublimate Kidney. P. F. Shapiro, Chicago.—p. 961.
*Determinative Studies of Undescribed Species of Gram-Negative Corynebacterium (C. Quasisterilum). G. W. Cooper, Washington, D. C.—p. 973.
Histologic Classification of Carcinoma of Cervix as Regards Ultimate Prognosis. W. L. McNamara, Oak Park, Ill.—p. 976.
Influence of Blood Groups in Malarial Transfusions. E. M. Knights, Toledo, Ohio.—p. 980.
Reduction in Amount of Blood Required for Folin Micro Blood-Sugar Method. H. J. Jeghers and V. C. Myers, Cleveland.—p. 982.
Serologic Studies by Precipitation, Precipitation-Fixation and Cold Fixation Tests for Syphilis. B. S. Levine, Hines, Ill.—p. 985.
Comparative Study of 2,000 Hinton, Kahn and Wassermann Tests. H. A. Austin, Rochester, N. Y.—p. 994.
Clinical and Serologic Comparison of Microscopic Slide Precipitation Test for Syphilis and Wassermann Test with Same Antigen. B. S. Kline and S. Littman, Cleveland.—p. 1008.
Routine Blood Chemistry Unit. E. G. Schmidt, Baltimore.—p. 1013.
New Microcolorimeter. A. G. Sheftel, New York.—p. 1016.
Graduated Test Tube Colorimeter. A. T. Brice, Jr., Florence, S. C. —p. 1018.
New Type of Mask for Study of Respiratory Exchange of Dog. A. W. Oughterson, New Haven, Conn.—p. 1022.
Simple Methods of Preserving Culture Media. H. A. Heise, Uniontown, Pa.—p. 1025.
Improved Pipette Manipulator. D. C. B. Duff, Vancouver, B. C.—p. 1027.
Apparatus for Slow Intra-Arterial Injection of M/6 Sodium Carbonate Solution as Anticoagulant in Blood Pressure Experiments by Means of Compressed Air. W. E. Gower and J. van de Erve, Sr., Charleston, S. C.—p. 1028.

Incidence of Lipoids in Urine of 1,470 Specimens.—Brice has made a routine micropolariscopic examination of 1,146 specimens of pathologic urine. The incidence of lipoidal substances was approximately 13.3 per cent, the frequency of their occurrence being comparable to that of the finding of casts, and the weight of their diagnostic significance being comparable if not greater. Evidence is offered suggesting the possibility that conditions of the gallbladder of a pathologic nature, not at all clearly understood, may bear an etiologic relationship to the degenerative diseases of the kidney, and further investigations of the occurrence of lipoids in urine from cases of gallbladder as well as hernia surgery are to be desired.

Studies of Undescribed Species of Gram-Negative Corynebacterium (C. Quasisterilum).—Morphologic, cultural, chemical and pathogenic studies were made by Cooper of a gram-negative bacillus, isolated from the sterile water system of cystoscopic and treatment rooms, the "characters" of which do not appear in conformity with any available recorded determinative studies. The bacillus, classified after the "Key for the Identification of Organisms of the Class Schizomycetes" of the Society of American Bacteriologists (1923), is found to be of the order *Actinomycetales*, family *Mycobacteriaceae*, genus *Corynebacterium*. The bacillus cannot with finality be designated as any one of the known species. Cooper suggests to create the distinctive specific name *Corynebacterium quasisterilum* Cooper.

Kansas Medical Society Journal, Topeka

31: 233-272 (July) 1930

Treatment of Fractures. J. R. Nilsson, Omaha.—p. 233.
Treatment and Management of Tetanus. L. W. Shannon, Hiawatha. —p. 235.
Necrology Report. E. E. Liggett, Oswego.—p. 239.
What is the Human Mind? P. S. Mitchell, Iola.—p. 245.
Coronary Thrombosis. H. T. Jones, Lawrence.—p. 251.

Laryngoscope, St. Louis

40: 469-548 (July) 1930

Relations of Sinus Disease to Vasomotor Disturbances. L. M. Hurd, New York.—p. 469.
Causes, Symptoms and Recent Aids to Diagnosis of Maxillary Sinusitis. M. F. Jones and P. M. Lund, New York.—p. 474.
Nasal Reconstruction by Means of Bone and Cartilage Existing Within Old Traumatized Nose. M. Metzenbaum, Cleveland.—p. 488.
Correction of Facial Deformities: Rhinoplasty. J. W. Maliniak, New York.—p. 495.
Importance of Nasal Plastic Surgery. W. W. Carter, New York.—p. 502.
Introduction to Rediscovery of Wittmaack. C. K. Gale, New York. —p. 507.
Uncommon Types of Neoplasms About Head. J. C. Beck, Chicago. —p. 511.
Radiotherapy in Diseases of Eye, Ear, Nose and Throat. E. A. May, Newark, N. J.—p. 525.
Relative Position of Deeper Vessels of Neck with End of Needle in Local Anesthesia Around Faucial Tonsil. P. S. Stout, Philadelphia. —p. 539.

Medical Journal & Record, New York

132: 53-104 (July 16) 1930

Tuberculosis, Drug Addiction and Negro within Our Gates. S. A. Knopf, New York.—p. 53.
Symptomless Rupture of Pregnant Uterus: Case. W. R. Payne, Newport News, Va.—p. 57.
Diagnosis of Gynecologic Diseases: Grouping and Treatment. R. T. Frank, New York.—p. 58.
Hypoinsulinism. J. C. O'Day, Honolulu, Hawaii.—p. 61.
Diabetes: Pathogenesis, Scientific and Rational Treatment. W. H. Porter, New York.—p. 64.
Renal Glycosuria. K. Eisenbud, New York.—p. 66.
Health Problems Concerning Children in Public Schools of Porto Rico. L. A. Salivia, Rio Piedras, Porto Rico.—p. 68.
Congenital and Birth Deformities and Advantage of Early Treatment. H. Keller, New York.—p. 71.
Simplifying Diagnosis of Congenital Syphilis. F. Herb, Chicago.—p. 74.
Congenital Diaphragmatic Hernia: Three Cases. H. J. Epstein, New York.—p. 76.
Congenital Syphilis in Third Generation. A. Deutsch, Györ, Hungary. —p. 78.
Mongolian Idiocy: General Review with Study of Cases at Elwyn Training School. E. A. Whitney, M. M. Shick, E. Bedrossian and S. P. Whitney, Elwyn, Pa.—p. 80.
Fundamental Principles of Calcium Therapy in Internal Diseases. E. Baráth, Budapest, Hungary.—p. 87.
Ancient Physician, Dr. Thomas Dover and His Legacy to His Country. W. R. Riddell, Toronto.—p. 90.

New England Journal of Medicine, Boston

203: 1-48 (July 3) 1930

New Features in Clinical Teaching. J. H. Pratt, Boston.—p. 1.
*Peripheral Neuritis Associated with Ginger Extract Ingestion. H. H. Merritt and Merrill Moore, Boston.—p. 4.
Diseases of Prostate and Management. F. F. Weiner, Brockton, Mass. —p. 12.
Torsion of Spermatic Cord with Gangrene of Testicle. F. H. Colby, Boston.—p. 16.
Habit Clinics: Organization and Development. D. A. Thom, Boston. —p. 19.
Evolution of Medicine. M. L. Harris, Chicago.—p. 24.
Surgical Treatment of Chronic Suppurative Diseases of Lower Respiratory Tract. C. M. Van Allen, New Haven, Conn.—p. 32.

Peripheral Neuritis Associated with Ginger Extract Ingestion.—In all of the fifteen cases, except one, reported by Merritt and Moore there was a history of drinking ginger extract. Some of the patients had been accustomed to drinking it for years. The onset of the neuritis was preceded in three cases by an upper respiratory infection, described as "flu," "grip" and "bronchitis," and by gastro-intestinal upset in two cases, which may have been related to acute alcoholism. One patient

denied alcoholism and states that she was recuperating from "flu," and took five bottles (2 ounces each) of ginger extract in a period of three days, as a tonic. Paralysis of the legs followed almost immediately afterward. The onset of the paralysis was rapid in most cases. Twelve of the patients noticed paralysis within four days after the onset of the initial symptoms of pain or numbness, and in six cases the motor paralysis was the first symptom noted. In all of the cases there was complete paralysis of the muscles moving the toes and ankles; in twelve cases there was weakness or paralysis of the fingers and wrists, and nine cases showed involvement of the knee, thigh or elbow muscles. Muscular atrophy was most marked in the cases in which there was paralysis of the small muscles of the hands. Trophic disturbances were noted in four cases only, and these were mild. Two cases showed a brawny desquamation of the skin on the palms, and two patients had edema of the feet after sitting up for a short interval. Pain was not a severe symptom in any of the cases, but most of the patients had slight pain in the calf muscles and a sensation of numbness in the hands and feet. Cutaneous sensory loss was not marked, and in eight cases none could be detected; in the other seven there was an impairment of the sense of light touch (to cotton) on the soles of the feet and the dorsal surface of the toes. Vibratory sense was impaired in eleven cases. No change was noted in the pain or temperature sense of the skin. The plantar responses and ankle jerks were absent in all cases, but the knee jerks were lost in only two cases. In four cases a defense reaction was elicited on stimulating the plantar surface of the feet. This suggests that possibly in these cases the pathologic process may not be entirely confined to the nerves but may involve the cord to some extent. Additional observations which would tend to support this hypothesis were the slightly increased protein content and abnormal colloidal gold curves found in the cerebrospinal fluid in several cases.

203: 49-94 (July 10) 1930

Dedication of New Admission and Isolation Building at North Reading State Sanatorium. H. D. Chadwick, Detroit, Mich.—p. 64.
Childhood Tuberculosis. F. T. Lord, Boston.—p. 68.
Difficulties in Determining Inheritance of Mental Defect: Present Definition. N. A. Dayton, Boston.—p. 73.
*Efficacy of Sulpharsphenamine in Wassermann-Fast Syphilis. J. L. Grund, Boston.—p. 76.

Efficacy of Sulpharsphenamine in Wassermann-Fast Syphilis.—Thirty-two patients with Wassermann-fast syphilis were treated by Grund with sulpharsphenamine. In only one case were the serologic observations favorably influenced. The negligible quantity of cases favorably affected is indicative of the fact that the change in the one single case was probably coincidental and bore no relation to the administered drug. Cutaneous disturbances directly attributable to the administered sulpharsphenamine were noted with much greater frequency than is customarily apparent in cases treated with other antisyphilitic arsenicals. Pain invariably accompanied the intramuscular administration of sulpharsphenamine. It was not infrequently severe and enduring. In addition to its lack of effectiveness in Wassermann-fast syphilis, the features just mentioned indicate that, if sulpharsphenamine is used at all, it must be with caution and with the awareness of its possible untoward effects.

New York State Journal of Medicine, New York

30: 761-822 (July 1) 1930

Treatment of Polypoid Sinusitis. G. A. Robinson, New York.—p. 761.
*What is Ahead in Medicine. W. H. Ross, Brentwood.—p. 763.
*Bilateral Tumors of Testicle: Two Cases. J. L. Wollheim, New York.—p. 765.

30: 823-886 (July 15) 1930

Medicine Under Siege. M. L. Harris, Chicago.—p. 823.
Upper Abdominal Pain. E. C. Reifenstein, Syracuse.—p. 829.
Hay Fever: Symptomatology. A. A. Thommen, New York.—p. 835.
Physicians and Pharmacopeia. W. A. Bastedo, New York.—p. 839.
Practical Application of Mental Hygiene Clinic (Program). N. R. Chambers, Syracuse.—p. 840.
Treatment of Laryngeal Tuberculosis with Artificial Sunlight. J. W. Miller, New York.—p. 844.
Interesting Small Community. F. W. Sears, Syracuse.—p. 848.
Osteogenesis Imperfecta Tarda (Fragilitis Ossium): Four Cases in One Family. M. Gleich, New York.—p. 850.

What is Ahead in Medicine.—Ross concludes his address as follows: What Edward Bok did for American commerce in advocating advertising should let us see the power of advocating that the profession of medicine assumes the proper relationship to health organizations and to the public health generally. We should not try to reform other factors in the great health movement today until our own attitude is reformed into a spirit of cooperation. As an inspiration we might adopt Bok's creed: "Wherever your lives may be, make you the world a bit more beautiful, and better, because you have lived in it." There is more than medicine in a doctor's life. It is something greater than that. Often a doctor comes nearer to awakening finer things in an individual than any one else does in human relationships. Beyond what we know and beyond what we do, there may be an influence that we do not realize. A doctor sees things face to face. There is something and no one knows what it is because it is not measurable.

Bilateral Tumors of Testicle.—Wollheim reports two cases, one of bilateral primary lymphosarcoma of the testes and an embryonal carcinoma of the testicle probably of teratomatous origin.

Northwest Medicine, Seattle

29: 295-342 (July) 1930

Intrahepatic Jaundice. A. M. Snell and F. M. Jordan, Rochester, Minn.—p. 295.
Tonsils as Foci of Infection. W. F. Cunningham, Seattle.—p. 304.
Import of Ethmoiditis. F. A. Plum, Honolulu, Hawaii.—p. 306.
Chronic Antrum Disease. L. E. Patrick, Seattle.—p. 307.
Postoperative Suggestions. J. F. Scott, Yakima, Wash.—p. 310.
Perineal Anesthesia in Obstetrics. T. Torland, Seattle.—p. 312.
Asymptomatic Syphilis. S. E. Light, San Francisco.—p. 314.
Irregularities of Pulse. R. T. Scott, Lewiston, Ida.—p. 316.
Reminiscences of Half Century of Practice. G. W. Kennicott, Chehalis, Wash.—p. 322.
Contract Practice. A. H. Peacock and W. O. Copps, Seattle.—p. 326.

Philippine Islands M. Assn. Journal, Manila

10: 181-222 (May) 1930

What We Expect of Private Physicians. E. D. Aguilar.—p. 183.
Résumé of Public-Health Progress in Philippines During 1929. E. D. Aguilar.—p. 190.
Chemotherapy of Leprosy by Use of Chaulmoogra Oil and Derivatives and Other Synthetic Preparations. F. Eubanas.—p. 203.
Eye, Ear, Nose and Throat Manifestations in Leprosy. E. Y. Dizon.—p. 211.
Pellagra in Philippines. J. N. Rodriguez.—p. 217.

Public Health Reports, Washington, D. C.

45: 1457-1513 (June 27) 1930

Acute Response of Guinea-Pigs to Vapors of Some New Commercial Organic Compounds: III. Cellosolve (Mono-Ethyl Ether of Ethylene Glycol). C. P. Waite, F. A. Patty and W. P. Yant.—p. 1459.
Quantitative Colorimetric Reaction for Ergot Alkaloids and Application in Chemical Standardization of Ergot Preparations. M. I. Smith.—p. 1466.

45: 1515-1571 (July 4) 1930

Third Report on Rat Flea Survey of City of San Juan, Porto Rico. A. L. Carrión.—p. 1515.
Water Purification: IV. Effects of Certain Modifications in Coagulation Sedimentation on Bacterial Efficiency of Preliminary Water Treatment in Connection with Rapid Sand Filtration. H. W. Streeter.—p. 1521.

South Carolina M. Assn. Journal, Greenville

26: 139-166 (June) 1930

Syphilis as Factor in Infant Mortality in South Carolina. J. I. Waring, Charleston.—p. 142.
Diagnosis and Treatment of Sinus Infection. P. V. Mikell, Columbia.—p. 143.
Is Agglutination Test for Undulant Fever Significant of Disease? J. H. Gibbes, Columbia.—p. 145.
Injection Treatment of Varicose Veins. W. H. Prioleau, Charleston.—p. 151.
Simple Mastoid Wound. E. R. Roberts, Charleston.—p. 153.

Wisconsin Medical Journal, Madison

29: 361-418 (July) 1930

Treatment of Cutaneous Malignancies. H. R. Foerster, Milwaukee.—p. 361.
Hematuria: Common Problem of General Practice. J. C. Sargent, Milwaukee.—p. 367.
Maternal Tetany. J. W. McGill, Superior.—p. 370.
Neurosyphilis. W. F. Lorenz, Madison.—p. 372.
Roentgentherapy: VII. Roentgen Therapy in Surgery. E. A. Pohle, Madison.—p. 378.
Diagnostic Problem. L. M. Warfield, Milwaukee.—p. 384.
Pseudohypertrophic Muscular Dystrophy: Case. E. J. Ball, Nekoosa.—p. 385.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Diseases in Childhood, London

5: 167-235 (June) 1930

*Occlusion of Hepatic Veins with Cirrhosis of Liver. R. Hutchison and S. L. Simpson.—p. 167.
*Significance of Protein Content of Cerebrospinal Fluid. F. T. Grey.—p. 187.
*Human Contagion and Tuberculous Infection in Childhood. B. Schlesinger and P. D. Hart.—p. 191.
*Metabolic Reactions to Acidosis Produced by Ammonium Chloride. N. Morris and O. MacRae.—p. 207.
*Exophthalmic Goiter: Case. F. Braid and A. V. Neale.—p. 229.
*Right-Sided True Diaphragmatic Hernia with Unusual Features. G. H. Dodds and J. A. Pocock.—p. 233.

Occlusion of Hepatic Veins with Cirrhosis of Liver.—A case of occlusion of the hepatic veins with secondary cirrhosis but without ascites, which began in early childhood and terminated twenty-three years later in primary carcinoma of the liver, is described by Hutchison and Simpson.

Protein Content of Cerebrospinal Fluid.—Protein and salt were measured and the cytology and bacteriology done by Grey in 101 cases. He found that all (fifty-five) cases showing less than 0.04 per cent protein are normal; that those lying between 0.050 per cent and 0.15 per cent are, without exception, cases of tuberculous meningitis (plus four at 0.040); and that those (nine) lying between 0.30 per cent and 0.72 per cent are cases either of pneumococcal or meningococcal meningitis. A modification of Canti's method for the detection of tubercle bacilli is described. The fluid is poured carefully into a clean watch glass, agitation being avoided. The coagulum will retain its cobweb form. A piece of cigaret paper the size of a slide is laid over the surface of the coagulum, to which it will adhere if gentle pressure is made by means of a platinum loop held in the left hand. It is transferred to the slide and blotted dry with bold straight strokes. When the cigaret paper is disengaged it will be found that the coagulum has adhered to the slide in its undisturbed condition. It is dried in the incubator for two minutes and fixed by passing three times through the flame. It is stained in the ordinary way. By this method, tubercle bacilli have not once been missed in the last three years in a case of tuberculous meningitis.

Tuberculous Infection in Childhood.—On the basis of a study of 118 children, Schlesinger and Hart assert that tuberculin reactions are more frequent among children of tuberculous households than among children whose homes are free from tuberculosis. Children living with a tuberculous parent or sibling show tuberculin reactions more frequently than children with tuberculous relatives who do not live with them; and the latter more frequently than children with no tuberculous relatives. A larger percentage of reactors is found among children who are living with a relative suffering from open tuberculosis than when the tuberculosis is closed. These findings are adequately explained by variation in frequency, intimacy and duration of contact, without assuming the existence of inherited predisposition. In a small series of children living with a parent or sibling who had nonpulmonary tuberculosis, tuberculin reactions were no more frequent than among children of nontuberculous households, and children with no tuberculous relatives at all. If further work, embracing a larger number of cases, confirms this finding, the view that children of tuberculous ancestry inherit a predisposition to tuberculous infection will be rendered untenable.

Metabolic Reactions to Acidosis Produced by Ammonium Chloride.—The effect of prolonged administration of ammonium chloride on the metabolism was studied by Morris and MacRae in four apparently normal children, in none of whom were any clinical manifestation of acidosis produced. Chemical changes in the blood were observed as follows: (*a*) The carbon dioxide was reduced; the reduction almost always reached its maximum early in the administration of ammonium chloride. (*b*) The chlorine was moderately increased. The increase in chlorine did not exactly balance the deficiency in carbon dioxide. (*c*) The fixed base remained within normal limits except in one case, in which it was reduced by 15 milliequivalents. (*d*) The calcium was slightly increased and the phosphorus slightly diminished. (*e*) The nonprotein nitrogen was slightly increased but within normal limits. Metabolism: (*a*) There was an increased output of calcium both by urine and by feces, and consequently a decreased retention. Evidence is adduced in favor of the excretion of calcium through the bowel wall. (*b*) There was an increased excretion of phosphorus by urine and feces and a diminished retention. (*c*) There was a slightly increased retention of chlorine. There were usually two peaks in the excretion of chloride: they occurred about the second and sixth days. The second peak usually coincided with the maximum output of ammonia. (*d*) There was an increased excretion of fixed base both by urine and feces. The extra fecal base consisted chiefly of calcium. The metabolic reactions to acidosis are discussed, and it is suggested that the increase in the output of calcium and phosphorus is the result of the response of the osseous tissues and forms a reaction of prime importance in the defense of the organism to acidosis. Evidence is brought forward from the result of the study in support of this thesis.

Exophthalmic Goiter.—The case reported by Braid and Neale illustrates the importance of thyroid disorder in the mother in producing thyroid instability in the child, and suggests its responsibility for the status thymolymphaticus which here is more likely to be congenital than secondary to the increased blood supply to the gland. Infection was the exciting factor, and the first acute respiratory infection, at the age of 12 months, was followed by signs of hyperthyroidism. Intercurrent infection rendered the condition more acute. The clinical picture did not differ in essentials from that in an adult, with the notable exception that tremors were never present. The first symptom was nervousness and was present for more than twelve months before the parents sought advice.

Right-Sided Diaphragmatic Hernia with Unusual Features.—The case reported by Dodds and Pocock shows a combination of rare features: (1) a large right sided true diaphragmatic hernia in a female; (2) abnormal fissuring of the liver and situation of the gallbladder; (3) the duodenum entirely confined to the right side of the body and not closely attached to the posterior abdominal wall; (4) a mesentery attached to the ascending colon; (5) a secondary herniation of the primary sac; (6) a rudimentary suprarenal gland.

Bristol Medico-Chirurgical Journal

47: 97-168 (Summer) 1930

Acute Intestinal Obstruction. D. P. D. Wilkie.—p. 97.
Child Guidance: Work in New York. Mrs. Posthuma.—p. 111.
Id.: Clinics from Brain Physiologist's Viewpoint. R. J. A. Berry.—p. 120.
Id.: Work in Great Britain. R. G. Gordon.—p. 126.
*Stokes-Adams Syndrome Produced by Digitalis in Case of Auricular Fibrillation. T. F. R. Hewer.—p. 135.
Dental Infections: Diagnosis and Treatment. G. F. Fawn.—p. 137.
Recent Dental Research. R. H. McKeag.—p. 143.

Stokes-Adams Syndrome Produced by Digitalis in Auricular Fibrillation.—In view of the increasing ascites and the exhausted condition of the patient, Hewer thought it advisable to try the effect of digitalization. She was given 30 minims (2 cc.) of the tincture four-hourly for six doses, and showed considerable improvement; the dose was then decreased to 20 minims (1.25 cc.) thrice daily for three doses, and on the third day her condition was satisfactory. During the night following the last dose of digitalis the pulse suddenly became regular at 36, and there were six Stokes-Adams attacks within the course of one and a half hours. Each of these began with a feeling of faintness for a few seconds, followed by vomiting and the complete unconsciousness with generalized convulsions for fifteen or twenty seconds, during which time there was no ventricular systole. There was complete recovery between the attacks. No more digitalis was given. On the fourth day (that following these attacks) the general condition was fairly good; the pulse was 70, with occasional dropped beats but no auricular fibrillation. On the evening of the fifth day the patient became much worse and had pulsus alternans for four hours. On the sixth day there were occasional dropped beats, and on the seventh auricular fibrillation reappeared. Coincidentally with the return of fibrillation the patient's condition improved, dyspnea was less and there was a slight diminution

of ascites, with some increase of urine excretion. There was then no change till the twenty-third day, when extreme cyanosis and dyspnea developed and the patient died. Permission was not given for a post mortem.

British Medical Journal, London

2: 47-86 (July 12) 1930

Old Multipara: Influence of Age and Parity on Maternal Mortality. A. L. Robinson.—p. 47.
Nervous Semeiology: Epilepsy. S. A. K. Wilson.—p. 50.
*Occurrence of Typhoid-Paratyphoid Bacilli in Sewage. R. S. Begbie and H. J. Gibson.—p. 55.
Food Poisoning Due to Eggs. W. M. Scott.—p. 56.
*Treatment of Varicose Veins by Injection. N. Scott.—p. 58.
Intravenous Sclerosing Solutions. T. H. T. Barber.—p. 59.
Acute Bronchitis with Vaginal Bleeding and Acute Abdominal Pain. W. C. D. Walmsley.—p. 60.
Pigmentation and Telangiectasis of Forehead Due to Manner in Which Hats Are Worn. J. H. T. Davies.—p. 61.
Sprue Treated with Intravenous Injections of Calcium Chloride. W. Gover.—p. 61.

Typhoid-Paratyphoid Bacilli in Sewage.—Fifty-eight samples of sewage were examined by Begbie and Gibson, each being from a different main sewer, so that the sewage of the whole city was sampled. Of these, seven yielded organisms identified as *B. paratyphosus* B Schottmüller by direct agglutination and agglutinin-absorption tests. From five of these samples the organism was isolated only by the method of brilliant green enrichment; from two cases by Wilson and Blair's method. In no case was a positive result obtained by both methods. The direct plating of the sewage on MacConkey's medium gave negative results throughout. In the case of the brilliant green enrichment method it was found that the most effective concentrations were 1 in 200,000 to 1 in 400,000. In those tubes to which smaller amounts of the dye had been added, coliform bacilli of the *B. lactis-aerogenes* type predominated, while higher concentration tended to inhibit growth of all organisms.

Treatment of Varicose Veins by Injection.—Scott concludes from his experiences that, provided there are no complications or contraindications, there are no cases which will not with care and time and judgment respond satisfactorily to treatment by the injection of suitable sclerosing solutions.

Medical Journal of Australia, Sydney

1: 799-830 (June 21) 1930

Clinician's Evaluation of Roentgen Examination of Lungs. F. G. Griffiths.—p. 800.
Pulmonary Tuberculosis in Childhood: Radiologic Aspect. W. Evans. p. 803.
Chest Radiography. J. G. Edwards.—p. 804.
*Minor Manifestations of Plumbism in Childhood. S. F. McDonald.—p. 806.
*Diagnostic Difficulties in Hydatid Disease. R. A. Willis.—p. 810.
Toxemia and Dextrose Tolerance. E. Downie.—p. 813.
Cancer and Heredity. H. M. Moran.—p. 817.

Minor Manifestations of Plumbism in Childhood.—McDonald states that mild lead poisoning is fairly common in Queensland and is an important cause of minor ill health in childhood. Its diagnosis requires care and exclusion of several other common conditions. Blood examination and the examination of the urine for lead, while important aids, are not final diagnostic points. The most important diagnostic point is a supply of available lead paint. Treatment should be vigorous and prolonged. These minor forms appear to be the precursors of some cases at least of juvenile chronic nephritis.

Diagnostic Difficulties in Hydatid Disease.—Willis warns that hydatid disease should receive careful consideration in all obscure pulmonary lesions, especially if tubercle bacilli are repeatedly absent from the sputum or if abnormal physical signs are largely restricted to the bases of the lungs. In cases of intra-abdominal masses of uncertain nature, especially if they involve the liver and no apparent primary growth is present, hydatid disease should be borne in mind and the appropriate tests carried out. Hydatid infestation of bone may closely simulate tuberculous and other inflammatory diseases and the diagnosis can be finalized only by educing definite and positive microscopic or serologic evidence of the nature of the lesion in each case.

Bulletin de l'Académie de Médecine, Paris

103: 487-523 (May 19) 1930

New Orientation of Antituberculosis Crusade Created by Generalization of Methods of Collapse Therapy. F. Bezançon.—p. 489.
*Calcification of Tuberculous Lesions by Means of Viosterol. C. Levaditi and Li Yuan Po.—p. 502.
Noise Evil in Modern Life. P. Portier.—p. 515.

Calcification of Tuberculous Lesions by Means of Viosterol.—In a previous study, Levaditi and Li Yuan Po have shown that the peroral administration of viosterol to rabbits infected intratesticularly with tuberculosis caused an intense calcification of the lesions. Since it is a current opinion that forms of pulmonary tuberculosis show a marked tendency to spontaneous calcification, the authors proposed to find: (1) whether such calcification takes place because the lesion tends toward cicatrization or whether the tubercles heal because the organism acquires the faculty of surrounding them with a calcium shell capable of impeding the spread of the bacilli, and (2) whether this tendency to calcification can be considerably increased by giving nontoxic doses of viosterol to tuberculous animals. Such doses release an accumulation of calcium in rachitic bones in the human body. Toxic or hypertoxic doses in animals bring about heterotopic calcification; i. e., the precipitation of calcium elsewhere than in the bones. A study of this phenomenon reveals that the calcium appears first in the cytoplasm following a change in the intracellular calcium metabolism. Since the calcium is deposited not only at certain points of election but also in chronic inflammatory foci, the authors undertook analogous tests in tuberculosis, using for their experiments rabbits inoculated with a strain of human tubercle bacilli. The culture was injected intratesticularly. Then viosterol in oil was administered by mouth. As a means of comparison, some inoculated animals were not given the viosterol. Analysis of results gave the following conclusions: (1) The viosterol administered orally as described augments to a considerable extent the calcification of the lesions; (2) the calcification of the tubercles is the result of a change in the calcium metabolism; (3) the calcium deposits in the necrosed and caseous tuberculous foci results from the confluence of intracellular calcium concretions; (4) it is probable that the formation of such a calcium shell impedes the spread of infection to surrounding tissues.

Bull. et Mém. de la Soc. Méd. des Hôpitaux de Paris

(54): 747-813 (May 19) 1930

*Pernicious Anemia Treated by Intramuscular Injections of Hepatic Extract. C. Aubertin and Voillemin.—p. 749.
*Nephritis in a Tuberculous Patient and Lipoid Nephrosis. M. Labbé, Boulin, Azérad and Justin-Besançon.—p. 751.
Splenadenoma Syndrome in Myeloid Leukemia. P. Émile-Weil and Isch-Wall.—p. 757.
*Capillary Resistance Test. P. Émile-Weil.—p. 762.
*Eosinophilic Hyperleukocytosis of Tropical Origin in a Child of Nine. P. F. Armand-Delille, A. F. Hurst and V. E. Sorapure.—p. 768.
Perihilar Infiltrations and Their Interpretation in Children. P. F. Armand-Delille and C. Lestocquoy.—p. 773.
*Toxic Meningitis: Polypeptidorrhachia. N. Fiessinger, L. Michaux and M. Herbain.—p. 775.
Coexistence of Herpes Zoster and of Epidemic Encephalitis in Low Form. P. Hombourger.—p. 791.
Sixteen Observations of Herpes Zoster in Epidemic Encephalitis. A. Netter.—p. 793.
Sodium Oleate as Hypotensive Medicine. M. Renaud.—p. 802.
Staphylococcic Meningitis and Septicemia in Supra-Orbital Notch. T. Dumitresco and G. Bolintineano.—p. 808.

Pernicious Anemia Treated by Intramuscular Injections of Liver Extract.—Aubertin and Voillemin treated by this means a pernicious anemia patient who could not swallow liver. In a few days there was a notable increase in the number of erythrocytes and leukocytes, gain in strength and considerable amelioration of the functional difficulties. But, in spite of continued treatment and increase in the daily injected dose, the erythrocyte count remained at a constant level. Since the general condition of the patient had improved and the gastric disorder had disappeared, it was possible to give fresh liver. The erythrocyte count rose rapidly. It appears, therefore, that injections of liver extract cause no inconvenience and bring about an increased number of blood cells which, even in a daily dose corresponding to 360 Gm. of fresh liver, seems less intense and complete than that caused by the ingestion

of raw liver. The injections can be extremely useful to patients who cannot tolerate fresh liver.

Nephritis in a Tuberculous Patient and Lipoid Nephrosis.—This case of Labbé et al. was clinically and biologically an instance of lipoid nephrosis. The patient had had attacks of marked edema, intense albuminuria, lipoiduria with birefringent crystals, and the principal blood stigmas had been noted. Yet the microscopic examination of the kidneys did not reveal the slightest lipoid infiltration. This tends to support the constantly growing conception that in lipoid nephrosis there is to be seen only a simple clinical and biologic syndrome which does not always have its particular anatomic substratum and which can attach itself to or coexist with an adjacent morbid state. The absence of lesions of renal amyloidosis was observed. Noteworthy are the following points made by the authors as a result of their observations: (1) The edemas of lipoid nephrosis are not so resistant to dechloridation as some American authors have stated, and (2) there exists a slight hemorrhagic syndrome marked by repeated epistaxis and abundant bleeding of the gums, a syndrome well known in azotemia but, so far as the authors have knowledge, not yet observed in nephrosis.

Capillary Resistance Test.—Interesting phenomena of the capillary resistance test are described by Émile-Weil. A rubber band is applied to the lower arm and secured so that the arterial circulation is not interrupted and the radial pulse remains perceptible. This causes stasis and hypertension in the capillary system. The forearm swells and the skin becomes violet-red. In a normal individual nothing else transpires when the band is left in position for ten minutes. When it is removed, the skin regains its normal color. In persons with a hemorrhagic tendency, petechiae appear, varying in size and in number. In weaker patients the spots occur during the compression and at the end of a few minutes, more often not until the pressure is released. According to Émile-Weil, the conditions under which this test is positive are more numerous than they were observed to be by those who previously described it—Weill, Chalier and Frugoni. It is found in hemorrhagic conditions, in acute purpura, in chronic hemorrhagic states, in hemogenia, in sporadic hemophilia, although not ordinarily in true hemophilia, and in hepatic hemorrhagic conditions. A positive reaction is frequent in chronic splenomegaly and in hepatitis, especially in cases of cirrhosis of the liver; it occurs likewise in plethora, habitually in congenital angioma, and to a much more varying extent in varicosis. The test shows decidedly only when there are coexistent sanguineous lesions, to a minimum extent in their absence. The variations in the conditions under which positive reactions are found lead the author to infer that it depends only on the capillary fragility.

Eosinophilic Hyperleukocytosis of Tropical Origin in a Child of Nine.—A similar condition in a youth 13 years of age was previously noted by Armand-Delille, who observes and compares the two cases in collaboration with Hurst and Sorapure. Examination of the six members of the family of the child aged 9 years revealed that all had eosinophilia except the two youngest, who had never been in the tropics. Tests did not reveal filariae in the patient's blood. An examination of the stool was negative as far as parasites or their eggs were concerned. The authors surmised that the cause of such a marked eosinophilic condition may be a hitherto unrecognized parisitism.

Toxic Meningitis: Polypeptidorrhachia.—In a summary by Fiessinger et al. of what they regard as a preliminary study on this subject, the following points are made: 1. It is possible to observe in the cerebrospinal fluid the presence of polypeptides. The large molecules are of local or of sanguineous origin. 2. The polypeptidorrhachia may accompany cerebral, bulbar or meningeal signs—toxic syndromes which seem all the more marked in that the elevation of the polypeptides is more manifest in proportion to the total nonprotein nitrogen. These syndromes afford a connection between the hepatic or renal insufficiencies which directly or indirectly create the incomplete cleavage of the polypeptides. 3. As a result, one may admit the existence of forms of toxic meningitis caused by polypeptides.

Paris Médical

1: 507-538 (June 7) 1930

Infectious Diseases: Annual Review of Literature. C. Dopter.—p. 507.
*Amebic Abscess of Lung: Diagnosis. V. de Lavergne, E. Abel and R. Debenedetti.—p. 519.
Psittacosis: Clinical Aspect and Treatment. E. Sacquépée and L. Ferrabouc.—p. 523.
Diphtheria: Present Status of Prophylaxis in Nurslings. P. Lereboullet. —p. 527.
Primary Meningo-Encephalitis in Mumps. R. J. Weissenbach, G. Basch and M. Basch.—p. 531.

Amebic Abscess of Lung: Diagnosis.—De Lavergne et al. observed a case of amebic abscess of the lung with a pleural effusion that contained a large number of eosinophils. They believe, however, that this phenomena occurs only in one stage of the disease. When the microscopic examination of a pleural exudate reveals the presence of a large number of eosinophils, it is evidence in favor of the amebic origin of the condition. A negative result, on the contrary, is not of value because it may only mean that the examination has been performed too early or too late.

Presse Médicale, Paris

38: 793-808 (June 11) 1930

*Hay-Fever and Asthma: Diagnosis of Substances That Increase Sensibility, and Treatment by Means of Cutireactions and Inhalations of Pollen Extract. E. Joltrain and L. Diard.—p. 793.

Hay-Fever and Asthma: Diagnosis of Substances that Increase Sensibility, and Treatment by Means of Cutireactions and Inhalations of Pollen Extract.—Joltrain and Diard set forth a technic for the determination of pollenarious substances that are capable of increasing sensibility. They expound the treatment that has given them the greatest number of cures. This treatment is the method of repeated cutireactions first proposed by Pasteur, Vallery-Radot and Haguenau, completed and perfected by these authors by means of the inhalations of diluted extracts of the pollens to which the patient has shown himself most sensitive in the cutireactions. One hundred and eighty-two cases were observed and tabulated.

38: 873-888 (June 28) 1930

Modality of Colloidal Flocculation. A. Lumière.—p. 873.
Microscopic and Chemical Study of Expectoration of Persons Suspected of Having Pulmonary Silicosis. A. Policard, A. Magnin and E. Martin.—p. 875.
Pleural Calcifications. C. Gandy and P. Baize.—p. 877.
*Treatment for Intestinal Occlusion. A. M. Dogliotti and M. Mairano.—p. 880.

Treatment for Intestinal Occlusion.—Three years of experience with numerous cases of this kind have led Dogliotti and Mairano to attribute to elimination through the stomach the marked diminution in the chlorides of the organism. In a high occlusion, the sodium chloride is secreted in abundance without being absorbed anew by the intestine. This could not be otherwise, according to these authors, and in such an occlusion there must necessarily be an abundant elimination of chlorides through the stomach and liver. The existence of a toxic substance formed as a result may well be doubted, and the increase in secretion of bile and that of a gastric juice with a high sodium chloride content may be explained in another manner. Experiments on a dog lead the authors to conclude that the production of a special toxin following duodenal occlusion is rare or nonexistent and that the exaggeration of gastric or hepatic secretion with a high degree of elimination of sodium chloride is a purely reflex phenomenon caused probably by abnormal excitations arising from the occlusion. In twelve cases of intestinal occlusion the authors gave intravenous injections of a 10 per cent solution of sodium chloride in water (water in large quantities being highly essential in this treatment) or subcutaneous injections of physiologic solution of sodium chloride. They report favorable and immediate results in cases of high occlusion and favorable but less marked ones in certain cases of strangulated hernia, intestinal volvulus, and in two cases of occlusion of unknown cause. The results were negative in the paralytic ileus of diffuse peritonitis. In no case must the sodium chloride and water in large doses be considered as causal treatment.

Schweizerische medizinische Wochenschrift, Basel

60: 477-500 (May 24) 1930

Chemotherapy by Means of Bismuth Quinine Iodide. H. Sahli.—p. 477.
Significance of Chlorine Sugar Quotient for Differentiation Between Human Milk and Cow's Milk. A. Keller and H. Mai.—p. 487.
*Changes in Retina in Patients with Renal Disorders. K. Urwyler.—p. 489.
Treatment of Perforated Central Ulcer of Cornea. J. Strebel.—p. 493.

Changes in Retina in Patients with Renal Disorders.—Urwyler states that ophthalmologic examinations on 116 patients with renal diseases revealed that in more than one third of the cases there existed changes in the retina. In cases of secondary contracted kidney caused by chronic nephritis, retinal changes were noted in 50 per cent of the cases. The ophthalmoscopic observations did not indicate the nature of the renal disease. However, changes in the retina concurred with arterial hypertension and they were not connected with the retention of urea in the blood.

Archivio Italiano di Chirurgia, Bologna

26: 109-236 (May) 1930

Experimental Mycotic Cholecystitis. G. Morone.—p. 109.
*Diabetes Insipidus Due to Cranial Trauma. C. F. Bianchetti.—p. 169.
Postoperative Pulmonary Complications. C. de Fermo.—p. 189.
So-Called Ideal Cholecystectomy (Haberer). G. Gullotta.—p. 214.
*Some Examples of Arteriography. A. Chiasserini.—p. 219.
*Autoplastic and Homoplastic Periosteal Grafts of Adult Animals. E. Polacco.—p. 231.

Diabetes Insipidus Due to Cranial Trauma.—Bianchetti describes and comments on a case of diabetes insipidus resulting from cranial trauma. The disorder, which lasted more than two months, is ascribed to a lesion of the neurohypophyseal apparatus and, more particularly probably of the infundibulum, in consequence of the subdural hematoma produced.

Some Examples of Arteriography.—Chiasserini gives a brief account of the history of arteriography and recites his own experiences, based on ten arteriographs made on man, in cases of trophicovascular disturbances of the lower limbs, and also on experimental data. To prevent or to reduce to a minimum possible untoward incidents due to the injection into the peripheral arteries of a radiopaque hypertonic solution, it is necessary to observe with care certain technical details. Arteriography is a new method of research that has not yet passed the experimental stage.

Autoplastic and Homoplastic Periosteal Grafts of Adult Animals.—Polacco applied autoplastic and homoplastic grafts consisting of loose pieces of periosteum of adult rabbits to various organs. He examined carefully with the microscope the flaps of periosteum before applying them, and demonstrated that the presence of bone and its necrosis is not necessary for their growth and for the development of young bone or cartilage in the grafted osteogenic tissue.

Clinica Ostetrica, Rome

32: 257-320 (May) 1930

*Diagnostic Value of Cutaneous Vaccination in Gonococcal Adnexitis. L. Bacialli and M. Artom.—p. 257.
Optic Neuritis Developing During Lactation Period. A. Boccassini.—p. 266.
Diagnostic Error: Interrupted Pregnancy Taken for Hydatid Mole. G. Venturoli.—p. 273.
*Causes of Child Mortality Intra Partum and During First Days of Extra-Uterine Life. L. Puccioni.—p. 274.

Diagnostic Value of Cutaneous Vaccination in Gonococcal Adnexitis.—Bacialli and Artom, in studying the diagnostic value of cutaneous vaccination in gonococcal adnexitis, found by means of the intracutaneous reaction with skin vaccine some cutaneous hypersusceptibility which has diagnostic value, although shown to be absolutely aspecific. The authors point out the probable causes of such aspecificity.

Causes of Child Mortality Intra Partum and During the First Days of Extra-Uterine Life.—Puccioni studied the course and the causes of stillbirths and of infant mortality in the first days of extra-uterine life in the Clinica di Modena during the period from Jan. 1, 1916, to Dec. 1, 1929. Stillbirths and infant mortality diminished steadily during the period of time considered. The most frequent causes of death were endo-uterine asphyxia, lack of vitality and syphilis; then came birth traumas and maternal diseases. The author reviews the various factors that may have served as contributing causes in infant mortality and points out what the obstetricians can do in order to lower infant mortality.

Policlinico, Rome

37: 725-760 (May 19) 1930. Practical Section

*Muzii Method for Perfect Orthopedic Reduction of Diaphysary Fractures of Femur. F. Benedetti-Valentini.—p. 725.
Multiple Gummas of Extensor Carpi Radialis Longus. S. Cerqua.—p. 733.

Muzii Method for Perfect Orthopedic Reduction of Diaphysary Fractures of Femur. — Benedetti-Valentini describes a new nonsurgical method for the exact reduction of diaphysary fractures of the femur, as proposed by Muzii. He reports also two cases, which are the first application of the method since the cases reported by the proponent of the method. He speaks also of a case of fracture of the humerus to which he applied the same method. The results were excellent.

37: 761-796 (May 26) 1930. Practical Section

*Chronic Nephrosis, with Amyloidosis of Kidney, Spleen and Liver. G. Borromeo.—p. 761.
Treatment of Surgical Tuberculosis. T. Silvestri.—p. 767.

Chronic Nephrosis, with Amyloidosis of Kidney, Spleen and Liver: Diagnostic Significance of Quantitative Fluctuations of Albuminuria.—Borromeo describes the clinical course and the anatomopathologic changes in a case of chronic nephrosis, with amyloidosis of the kidney, the spleen and the branches of the hepatic artery. The amyloidosis was evidently a complication of the nephrosis. The cause of the nephrosis itself was difficult to ascertain. It may have been connected with a pneumococcic infection. The author emphasizes the fact that in the present case, in the absence of any other diagnostic criterion, the diagnosis of amyloid degeneration was equally possible, being based on the peculiar course of the albuminuria, especially the notable and unforeseen quantitative fluctuations.

Riforma Medica, Naples

46: 673-712 (May 5) 1930

How Fractures of Lower Jaw Should be Treated. U. Saraval.—p. 675.
*Relations of Periodic Acetonemic Vomiting to Hemicrania. H. Curschmann.—p. 679.
Strangulated Hernia of Meckel's Diverticulum. A. Pollidori.—p. 682.
Safranine in Researches for Sugar in Organic Fluids. G. B. Lo Faso.—p. 686.

Relations of Periodic Acetonemic Vomiting to Hemicrania.—Curschmann describes a fatal case of periodic acetonemic vomiting in a boy, aged 8. The child had suffered since infancy from a grave type of hemicrania. The mother and several relatives on the mother's side had suffered (or were still suffering) from hemicrania. In March, 1925, the boy was seized for the first time with an attack of vomiting for which no cause could be assigned and with diarrhea, which continued for two days and a half, following which the child was well. Such attacks were, however, repeated, being associated with pains in the stomach and occasionally with pains in the head. The child did not appear to the parents to be gravely ill nor did they note an odor of acetone in the child's breath. In May, 1927, Curschmann saw the child for the first time. There were occasional pains in the vicinity of the umbilicus, with repeated vomiting. The tentative diagnosis was gastric ulcer. Roentgen examination of the stomach and of the duodenum revealed nothing abnormal. Feb. 22, 1930, the patient did not appear to be gravely ill but there was some stupor, and the vomitus had a strong odor of acetone. The heart was normal, the pulse was 135-140, and the blood pressure was 115-65 mm. of mercury. February 24, the sleep had been much disturbed; the temperature was 38.3 C. (101 F.); the pulse was filiform and frequently 160. No vomiting occurred. The patient drank considerable quantities of milk with sugar, fruit juices and the like. There was a slight odor of acetone. The patient showed agitation and facies hippocratica. The urine contained 4 per cent of albumin. There was no acetone, no aceto-acetic acid, no sugar, no urobilin, no urobilinogen. Ten units of

insulin was administered. The circulatory changes became more marked. In spite of caffeine and digitalis, the pulse became constantly feebler (finally imperceptible) and the patient died. As to treatment, injections of dextrose and insulin, together with heart stimulants, soon checked the first violent attack. In the second (weak) attack, insulin sufficed without injections of sugar. The fatal outcome of the third attack shows that also in acetonemic vomiting, in spite of the compensation of the ketonuria and the checking of the vomiting by injections of sugar and insulin, it is impossible to arrest the coma due to circulatory insufficiency, the same as in more or less compensated states of diabetic coma. Hence it may be concluded that, in acetonemic vomiting, one must from the start tone up the circulation with effective remedies just as in diabetic coma.

Tumori, Milan

4: 201-302 (May-June) 1930

*Use of Magnesia in Treatment of Adenocarcinoma. A. Bolaffi.—p. 201.
Chemical Researches on Neoplastic Tissues. W. Marvelli.—p. 212.
Modifications in Structure of Pancreas in Rats Inoculated with Adenocarcinoma. G. de Gaetani.—p. 221.
*Alveolar Sarcoma or So-Called Carcinomatoid Sarcoma of Kidney: Case. L. Uluhogian.—p. 230.
Endothelioma: Need of a Better Classification of So-Called Endotheliomas. A. Fabris.—p. 239.
Clinical Aspects of Malignant Tumors of Prostate. I. Cappellini.—p. 280.

Use of Magnesia in Treatment of Adenocarcinoma.—Bolaffi concludes that the treatment of rats with adenocarcinomas by means of magnesium chloride administered by various routes (subcutaneous and oral) in the same doses, and also in larger doses than those suggested by the authors who have studied the question, brought about in a few cases only a slight prolongation of the life of these animals, as compared with the controls and only in certain instances effected a reduction in the growth of the neoplasm. The treatment did not affect the magnesium content of the neoplasms. In some instances it caused a change in the relation of the potassium to the calcium content of the neoplastic tissue through increase of the calcium content. These experiments, however, do not coincide with those in which a marked inhibitory influence on the growth was observed.

Alveolar Sarcoma or So-Called Carcinomatoid Sarcoma of Kidney.—Uluhogian describes a rare case of alveolar sarcoma of the kidney in an adult—a malignant tumor which, in its microscopic structure, is closely related to the renal epitheliomas called by Billroth "carcinomatoid sarcoma."

Archivos Españoles de Pediatría, Madrid

14: 129-192 (March) 1930

*Thallium Acetate in Epilation Treatment of Tinea in Children. G. Rodríguez-Izquierdo y Mateos.—p. 129.
Indications and Technic of Artificial Pneumothorax in Pulmonary Tuberculosis in Children. L. Casquero González.—p. 164.

Thallium Acetate in Epilation Treatment of Tinea in Children.—Rodríguez-Izquierdo y Mateos used thallium acetate in the treatment of ten children, from 2 to 7 years old, with tinea of the scalp. The treatment is simple and efficient. Thallium acetate should be kept in a dark place to avoid possible deterioration. The dose should be given only once, orally, during fasting. All the other known routes of administration of the drug should be avoided, since they may cause intoxication. If such phenomena arise, sodium thiosulphate (from 0.1 to 1 Gm.) should be given. In cases of resistance to thallium compounds, the second dose should be given only after an interval of at least a month. The elimination of thallium compounds from the organism seems to be especially through the urine; therefore the urinary tract should be examined before the drug is administered. As soon as the hair begins to fall out (usually two or three weeks after the administration of the drug) its removal by mechanical means (such as pulling the hairs with the fingers or with a pincette) should be encouraged. The child's head should be washed daily with soap and then a local application of a common antiseptic, such as tincture of iodine, should be made. The thallium treatment of tinea does not exclude roentgen treatment, which, when properly given, is as efficient. The thallium treatment, however, is preferable to the roentgen treatment in the case of very young children or children who cannot be kept quiet enough for the latter treatment. Besides that, complaints caused by the intracranial hypertension, such as cephalalgia, dizziness and vomiting, are avoided. The roentgen and thallium combined treatment, half of the normal doses being given, though not necessary, is advisable because the children receive the advantages of both treatments without suffering the inconveniences of either; thus, the possible intoxication of thallium and the possible dermatitis caused by radium are avoided.

Archiv für Kinderheilkunde, Stuttgart

90: 161-240 (May 24) 1930

Aplastic Anemia in Children. G. Abraham.—p. 161.
*Mongolian Idiocy: Etiology. A. Bauer.—p. 169.
*German Measles: Atypical Form. L. O. Finkelstein and R. W. Stojanowskaja.—p. 181.
*Sugared Condensed Milk: Vitamin C Content. A. Bakke.—p. 188.
First Dentition: Accompanying Phenomena. F. Gierthmühlen.—p. 196.
Brine Baths: Theoretical Principles of Action. Röckemann.—p. 201.
Neuroses in Children. S. Katz.—p. 216.

Mongolian Idiocy: Etiology.—Bauer studied the cause of mongolian idiocy in thirty-eight cases of this condition in twins reported in the literature and in two cases that he observed personally. From his study he concludes that an exogenic factor, as exhaustion of the mother, does not play a rôle in the development of mongolian idiocy. If it did the condition would always develop in both twins but it never does in cases in which they are dizygotic. The author believes therefore that the cause of mongolian idiocy is genotypical and not paratypical.

German Measles: Atypical Form.—In a sanatorium for tuberculous children, Finkelstein and Stojanowskaja observed an epidemic of a condition that in some of its symptoms differed from any hitherto described disease. From Dec. 20, 1927, to April 1, 1928, twenty-eight cases were observed, thus proving that the disease was contagious. During this period the 150 children in the sanatorium were kept in four pavilions and it was noted that nearly all the cases occurred in the pavilion for children aged from 5 to 8 years. In the pavilion for children aged from 8 to 11 four cases were noted, and in the pavilion for children aged from 12 to 15 only one child contracted the disease. In the city near which the sanatorium was located, cases of the disease were not observed. The disease was not preceded by prodromal symptoms and the only manifestation that was present in all cases was an exanthem. In a few of the cases conjunctivitis and rhinitis appeared, but they lasted only two or three days. In none of the cases did the temperature rise above 99 F. (the average temperature for children in the sanatorium). All the children felt well. The exanthem consisted of localized patches distributed over the entire body. It appeared first, however, on the face and particularly on the cheeks. During the first twelve hours the fact that the exanthem did not involve the region of the nose and lips was not so noticeable but during the second twelve hours it was striking, and the face resembled the face of a child with scarlet fever; in some cases in which large patches were present it resembled the face of a child with infectious erythema. The exanthem spread rapidly and twenty-four hours from the time it appeared the disease picture was complete. The individual skin lesions consisted of patches from 3 to 5 mm. in diameter with an irregular serrate margin. In even the most severe cases the lesions did not become confluent, and between them there was always skin of a normal color. In many of the cases there were also present light red patches from 2 to 3 mm. in diameter on the inside of the cheeks and on the hard and soft palates. After from twenty-four to forty-eight hours the exanthem disappeared, leaving an indefinite pigmentation that lasted for several days. Desquamation was not noted in any of the cases. The authors emphasize the fact that in all the cases they examined the lymph nodes carefully but not once did they find them enlarged or painful. Although they at first were inclined to consider the condition a hitherto undescribed "seventh disease," they later concluded that it was probably a rare form of German measles.

Sugared Condensed Milk: Vitamin C Content.—In experiments on guinea-pigs, Bakke demonstrated that pasteurization of milk does not affect its content of vitamin C. From

the standpoint of its antiscorbutic action, sugared condensed milk supplies an amount of vitamin C sufficient to prevent rickets.

Archiv für Psychiatrie und Nervenkrankheiten, Berlin

90: 177-544 (May 20) 1930

Medulla Oblongata: Blood Supply. L. Pines and E. Gilinsky.—p. 177.
Fatal Meningo-Encephalitis Following Injections of Neoarsphenamine: Case. L. Pines and J. Prigonikow.—p. 185.
*Hyaline Degeneration of Capillaries of Cerebrum. A. Klissurow.—p. 201.
Hypothalamus: Centers in Mammals and in Man. E. Grünthal.—p. 216.
*Sarcoma Metastases in Cauda Equina. D. Miskolczy.—p. 268.
Acute General Ataxia: Pathogenesis. M. Neiding and M. Zajewloschin. —p. 290.
Changes Produced in Cerebrospinal Fluid by Ultraviolet Irradiation. E. Meumann and C. Riebeling.—p. 302.
Jasper's Theory of Understandability. S. Hedenberg.—p. 318.
*Amentia Praecox: Antoxyproteic Acid Content of Urine. S. Gullotta. —p. 436.
Frontal Lobe of Brain: Function. F. Halpern.—p. 446.
Dementia Praecox: Histopathology. J. Schuster.—p. 457.
Investigation of Function of Central Nervous System by Means of Subordination Chronaxia. G. Marinesco, O. Sager and A. Kreindler. —p. 517.
Dementia Praecox: Disturbances of Liver. R. Zimmermann.—p. 537.

Hyaline Degeneration of Capillaries of Cerebrum.—According to Klissurow, hyaline degeneration of the blood vessels of the cerebrum is not a rare condition. It involves the capillaries and precapillaries more frequently than it does the vessels of greater caliber and it occurs in the gray matter more frequently than in the white matter. It is usually associated with an increase in the size of the lumen of the vessel. Apparently it does not occur in the first decade of life but after this decade it seems to be a common occurrence and involves the blood vessels of the cerebrum in an irregular manner. The predilection points for hyaline degeneration of the cerebral blood vessels are the occipital lobe, the central convolutions, the medulla oblongata, th pons and the choroid plexus. In other parts of the brain the condition is rare. It does not seem to have a definite relation to arteriosclerosis. It occurs in a great number of different diseases but its relation to them is obscure. The author believes that it is an age manifestation because with increasing age it increases in frequency and extent.

Sarcoma Metastases in Cauda Equina.—Miskolczy reports a case of spindle cell sarcoma of the ribs in a man, aged 49, with intense pain in the legs, disturbances of gait and mental changes resembling those seen in taboparalysis. Postmortem examination revealed metastases not only in the lungs and small intestine but also in the left temporal and parietal lobes of the brain and in the spinal ganglions and the cauda equina.

Amentia Praecox: Antoxyproteic Acid Content of Urine.—In two cases of amentia praecox, Gullotta found the antoxyproteic acid content of the urine markedly increased. The antoxyproteic acid fraction gave all the characteristic urine reactions for amentia praecox and dementia praecox; namely, the Million, Ehrlich, Weiss, Hay and Buscaino reactions.

Beiträge zur klinischen Chirurgie, Berlin

149: 171-332 (April 12) 1930

Diagnosis of Diseases of Vertebrae Especially in Relation to Trauma. H. Burckhardt.—p. 171.
*Manual Reposition in Congenital Dislocation of Hip. J. Gangler.—p. 188.
Polycystic Degeneration of Kidneys. G. E. Niecke.—p. 210.
Experimental Hydronephrosis: Observations on Living Kidney of Rabbits. P. Vonwiller and R. Allemann.—p. 226.
*Etiology of Subchondral Osteonecrosis. E. Cordes.—p. 248.
Surgical Treatment of Perforating Gastric and Duodenal Ulcers. V. Promptowa.—p. 297.
Experimental Study of Effect of Roentgen Rays on Basal Metabolism. S. Frey and H. G. Zwerg.—p. 310.
Gangrene of Penis. J. Lehmann.—p. 322.
Effect of Tribromethanol on Liver Function. R. Finaly.—p. 329.

Manual Reposition in Congenital Dislocation of Hip.—Gangler reports 71.4 per cent cures in all cases, 38.4 per cent in the bilateral cases. He prefers to effect reposition between the second and fourth years of life. The results remain good, at least for ten years, the duration of his observation. The treatment consists of manual reposition and the application of a plaster cast which, although replaced by a new one every six weeks, is left on for from eight to ten months. Careful control by roentgen examination is important. The cure is effected by growth of the upper rim or lip of the acetabulum, as, he says, can easily be proved by means of measurements.

Etiology of Subchondral Osteonecrosis.—According to Cordes, subchondral osteonecrosis (Perthes' disease) is an aseptic necrosis of the bony epiphysis of the head of the femur caused by nutritional disturbances resulting from dissolution of the blood vessels. He is convinced that arthritis deformans is not a factor. It is really an artefact, the result of nutritional disturbances in the joint cartilage. Experimentally, a necrosis could be produced by trauma only in those animals that were already the victims of a severe infection. A necrosis always followed when the blood supply to the epiphysis was completely stopped by rupture of the blood vessels. As an effective treatment Cordes recommends operation, exposure of the epiphysis and complete removal of all necrotic tissue. He feels that Köhler's disease of the metatarsals is similar in its origin to Perthes' disease.

Deutsche medizinische Wochenschrift, Berlin

56: 947-988 (June 6) 1930

*Roentgen Treatment of Agranulocytosis. U. Friedemann and A. Elkeles.—p. 947.
Pathogenesis and Therapy of Detachment of Retina. K. Wessely.—p. 950. C'cn.
Present Status of Chemotherapy, Especially in Tropical Diseases. C. Schilling.—p. 955.
*Avulsion of Epiphysis of Spina Iliaca Anterior Superior. Löhr.—p. 958.
Symptomatology and Differential Diagnosis of Dermatomyositis. F. Steinfeld.—p. 959.
Poisoning Caused by Varnish Lacquer. G. Ohnesorge.—p. 961.

Roentgen Treatment of Agranulocytosis.—In forty-three cases of agranulocytosis, Friedemann and Elkeles employed roentgen irradiation of the bone marrow. This treatment has a stimulating effect because very small doses, namely, one twentieth of the unit skin dose, are applied. In twenty-three patients the agranulocytosis was complicated with sepsis or with pneumonia, and all of them died. Of the remaining, five died within thirty-six hours after the beginning of the treatment. In fifteen cases without complications the treatment was begun early enough and of these thirteen recovered. That the irradiation stimulates the leukopoietic function of the bone marrow is proved by the fact that the blood showed a marked increase in the bone marrow elements during the first twenty-four hours after the treatment.

Avulsion of Epiphysis of Anterior Superior Iliac Spine, a Typical Injury in Foot Races.—Löhr asserts that avulsion of the spina iliaca anterior superior is a typical sport injury that occurs especially during the age of growth. The two cases observed by him both concerned youths, aged 16. Although in the literature there are reports of cases that resulted from a fall or from similar accidents, the author asserts that in the majority of cases avulsion of the epiphysis of the spina iliaca anterior superior is caused by muscular traction, especially when participants in foot races stop too suddenly. He explains the mechanism of the avulsion. Concerning the treatment in such cases he says that attempts at reposition are usually not successful, but hot air treatments and massage generally lead to recovery within four or six weeks. In order to prevent such injuries the author advises that at the end of foot races the participants should slow down gradually and not stop suddenly.

Deutsche Zeitschrift für Chirurgie, Leipzig

224: 129-200 (May) 1930

*Experimental Study of Effect of Extirpation of Thymus on Production of Goiter. E. Stahnke.—p. 129.
Retrogressive Changes in Senile Involution of Mammae. E. Walchshofer. —p. 137.
*Surgical Treatment of Diverticulum of Esophagus. L. Zukschwerdt.—p. 150.
*Effect of Trauma on Functioning of Organs. M. Marcus.—p. 158.
*Transfusion of Blood. J. Majanz.—p. 171.
*Embolism of Arteries of Extremities. M. Marcus.—p. 186.
*Permissible Duration of Surgical Occlusion of Aorta. F. Ishiyama.—p. 197.

Experimental Production of Goiter.—Stahnke extirpated the thymus of rats and placed the animals on Tanabe's diet. He found on histologic examination of the thyroid that the alveoli were distended and filled with colloid, not at all resem-

bling the picture seen when the thymus is not removed, only the diet being given.

Surgical Treatment of Diverticulum of Esophagus.—Zukschwerdt reports twenty-five cases of diverticulum of the esophagus. Twenty of the patients were subjected to operation. In sixteen of these the diverticulum was removed radically. There were no deaths in the series. In only one instance was it necessary to provide a gastric fistula before the operation for removal of the diverticulum was done. That patient succumbed to pneumonia. In one case, in which Girard's operation was done, there was a recurrence. Fistulas developed in two cases in which Goldmann's operation was performed and in five cases in which the diverticulum was removed at one sitting. In two cases it was required to make a gastric fistula in order to effect healing of the esophagus fistula. The author advocates the radical removal of these diverticula in one sitting.

Effect of Trauma on Functioning of Organs.—Marcus reports observations which inevitably lead to the conclusion that even a relatively slight trauma, involving only the surface of the body, may cause a disturbance in the functioning of the internal viscera. The disturbance may be a fleeting one, or a genuine reduction of functioning or even a complete destruction of the organ, depending on the degree of severity of the trauma. The cause of this is believed to be a reflex or direct effect on the vasomotor nervous system. It is not unlike cerebral concussion and the author proposes the terms commotio hepatis, commotio renis, and so on.

Experiences with Blood Transfusion.—Majanz reports his observations and opinions based on 264 blood transfusions made on 192 patients. Direct transfusion is favored over transfusion of citrated blood. Complications are said to occur less frequently. Beck's method is the one of choice. Relatives are preferred to professional donors.

Embolism of Arteries of Extremities.—Marcus reports three cases: in one the embolus was situated in the fork of the abdominal aorta, and in two in the common iliac artery. A definite cause was unassignable in two cases; in the third the coexistence of hyperglobulia was regarded as causative. Two of the patients died immediately after the operation; the third, one with the embolus in the common iliac artery, survived. The technic, indications and contraindications of the operation are discussed briefly.

Permissible Duration of Surgical Occlusion of Aorta.—Ishiyama has succeeded in clamping the aorta experimentally in animals for as long as six minutes without the concomitant administration of oxygen. This success was due to the fact that he first clamps the superior vena cava and then the aorta. Most of the animals survived from two to four minutes of clamping, and three survived for six minutes.

224: 201-280 (May) 1930

Effect of Pathogenic Micro-Organisms in Digestive Tract on Results of Operations. Y. Tatebayashi.—p. 201.
Etiology of Acute Dilatation of Stomach. N. Matsuo.—p. 222.
*Acholic Cachexia. M. Takasu.—p. 240.
New Staining Method for Fat Droplets in Blood in Osteomyelitis. K. Matsubayashi.—p. 266.

Experimental Studies on Acholic Cachexia.—Takasu summarizes the results of a carefully made clinical study extending over a long period: Acholic cachexia is the result of lack of fat-soluble vitamins.

Klinische Wochenschrift, Berlin

9: 961-1008 (May 24) 1930

Function of Corpus Luteum. H. Knaus.—p. 961.
Method of Pregnancy Reaction in Urine by Demonstration of Hormone of Anterior Lobe of Hypophysis. B. Zondek.—p. 964.
Measuring Minute Volume of Output of Heart with Acetylene. C. Kroetz.—p. 966.
Cure of Rickets by Means of Various Therapeutic Methods. E. Stettner.—p. 974.
Maximal Sodium Chloride Deprivation by Means of Salt-Free Diet. J. Langhans and K. Sommer.—p. 977.
*Clinical and Roentgen Observations on Lungs and Heart Following Poisoning with Illuminating Gas. M. Israelski and E. Lucas.—p. 978.
*Encephalitic Changes in Brain in So-Called Exsiccosis. M. Goldzieher.—p. 981.
*Sport Disease. E. Jokl.—p. 984.

Clinical and Roentgen Observations on Lungs and Heart Following Poisoning with Illuminating Gas.—Two cases of poisoning with illuminating gas are reported by Israelski and Lucas. The authors describe the results of the clinical examination and the roentgenogram. Roentgen examination of the lungs revealed peculiar changes. When the roentgen examination was repeated about two weeks later the changes were no longer visible. The authors think that these temporary changes that appeared in the roentgenogram were caused by multiple hemorrhages from the pulmonary vessels. In one of the patients there also existed an acute dilatation of the heart, which formerly had been observed by Zondek in persons with gas poisoning.

Encephalitic Changes in Brain in So-Called Exsiccosis.—Goldzieher reports three cases of exsiccosis in infants ranging in age between 8 weeks and 4 months. All three cases had a fatal outcome. The postmortem examination showed that all the organs were normal. The macroscopic examination of the brain likewise did not reveal pathologic changes. However, microscopic examination revealed pathologic changes in the midbrain. There were diffuse cellular infiltrations and the meninges were hyperemic. From the nature of the pathologic changes the author assumes that they were inflammatory processes that had developed from an infection. The type of this peculiar encephalitis was primarily proliferative. Noteworthy is the fact that the pathologic changes were limited to the midbrain, whereas all other parts of the brain appeared normal. It is known from clinical observations as well as from experiments that the midbrain is of great significance for the water metabolism. Therefore the author thinks that in the midbrain the localization of the pathologic processes indicates a causal relation between encephalitis and exsiccosis.

Sport Disease.—Jokl describes a syndrome that develops mainly in trained athletes after maximal bodily exertion of short duration. He asserts that in its clinical aspect as well as in its etiology it is similar to mountain illness. The characteristic symptoms are palpitation of the heart, dyspnea, nausea, vomiting, headaches and visual disturbances. Mountain illness develops because the oxygen requirement of the body exceeds the oxygen supply. The author thinks that the syndrome developing in athletes is due to the same factor. He designates this syndrome as "sport disease."

Medizinische Klinik, Berlin

26: 761-798 (May 23) 1930

Examination of Vestibular Apparatus and Its Clinical Diagnosis Significance. H. Richter.—p. 761.
Diagnosis of Myoma. W. Benthin.—p. 764. C'td.
*Treatment of Pernicious Anemia. E. G. K. Wolff.—p. 767.
Zweifel's Axis Traction Forceps. D. Pulvermacher.—p. 770.
*Periodic Paralysis of Abducens Nerve. A. Stern.—p. 771.
Casuistic Contribution to Problem of So-Called Acute Aleukemic Lymphadenosis. F. Baumann.—p. 772.
*Toxic Injury of Granulocytic Apparatus as Probable Sequela of Arsphenamine Therapy. A. Meyer.—p. 774.
*Relations Between Renal and Endocrine Systems. F. Lebermann.—p. 775.
Relations Between Medicine and Natural Sciences. K. Staunig.—p. 777.

Treatment of Pernicious Anemia.—In the first part of the article Wolff gives a tabular report of sixty-nine cases of pernicious anemia that were treated in a Dresden hospital during the ten years from 1913 to 1922 and of eighty-nine cases that were treated in the seven years from 1923 to 1929. He thinks that this increase, during recent years, is only apparent and due to the fact that the diagnostic methods are better and that now more cases are recognized. Further, he discusses the prognosis and the various methods of treatment. He asserts that the former methods of treatment, namely, the administration of iron, quinine, arsenic, arsphenamine as well as transfusion of small quantities of blood, brought only temporary improvement, and within twelve or sixteen months all the patients died. Since the transfusion of large quantities of blood has been made possible by the discovery of blood groups, and especially since liver therapy was introduced, the prognosis in pernicious anemia has become much more favorable. The author further discusses the various aspects of liver therapy. He points out that the blood status is favorably

influenced and that in most cases the general condition likewise improves. However, the cerebral and spinal symptoms frequently progress in spite of liver treatment. They improve only in rare instances. The author also stresses that liver therapy is the more effective the earlier it is begun. In patients in whom the hemoglobin content has decreased to less than 30 per cent of normal, the treatment usually fails.

Periodic Paralysis of Abducens Nerve.—A woman, aged 28, had a periodically recurring paralysis of the abducens nerve. Her face was asymmetrical. The paralysis always developed after a headache and disappeared again after several weeks. Stern advances the following theory: The paralysis developed after a migraine. The asymmetry of the cranium makes it appear probable that there existed an anomaly in the bone structure, perhaps a too narrow superior orbital fissure. When, during an attack of migraine, the vessels were overfilled and dilated, it is probable that in the narrow bone passage pressure was exerted on the nerve. This pressure paralysis lasted several weeks. The patient has suffered from this condition for twenty years, and during this time the condition has not become progressive.

Toxic Injury of Granulocytic Apparatus as Probable Sequela of Arsphenamine Therapy.—Meyer reports the case of a young man who had received arsphenamine treatment on account of syphilis. The patient suddenly became ill with high fever and severe necrotic tonsillitis complicated by an ulceration of the gums and by blepharitis. The blood picture and the clinical aspect of the patient indicated at first an agranulocytosis. However, the further course made this diagnosis doubtful. Following a relatively short duration of the disease the patient recovered. During the beginning stage of the disturbance the author noted that the leukocytes, especially the neutrophils, were markedly reduced, and that the number of eosinophils was exceptionally large. A tabular report indicates that already on the second day after the patient had been hospitalized the number of neutrophils increased, whereas the eosinophils decreased, and that the lymphocytes and especially the monocytes in the beginning showed a relatively strong increase and then gradually decreased to normal. In the end there developed a deviation to the left and myelocytes appeared. The regenerative action of the bone marrow became manifest in the appearance of many young forms. The following factors are stressed as evidence against agranulocytosis: the age of the patient (agranulocytosis usually develops in older persons), the absence of icterus, the number of leukocytes and the peculiarities of the blood picture. Against glandular fever was leukopenia, the development of severe necrosis, the eosinophilia and the severe disturbance in the general condition. Meyer comes to the conclusion that the injury of the granulocytic apparatus was caused by the preceding arsphenamine or bismuth therapy and he designates this condition as a symptomatic, toxic agranulocytosis.

Relations Between Renal and Endocrine Systems: Observations on Patients with Renal Disease and Hypothyreosis.—Lebermann reports the clinical history of a girl, aged 15. Renal disturbances were indicated by edema, albuminuria, increased blood pressure and other complaints of the patient. Against renal disease was the almost normal function of the kidney, during the water test, and the absence of other manifestations of retention, such as an increase in the rest nitrogen, and the rapid disappearance of the disorders. For an insufficiency of the organs of internal secretion was the entire habitus of the patient, the mental underdevelopment, the infantilism and the hypogenitalism. Insufficiency of the thyroid was indicated by the habitus, the soft struma, the tendency to edema formation and especially the prompt therapeutic results of thyroxin. However, the increased blood pressure and a slight increase in the basal metabolism spoke against hypothyreosis. The author points out that this case demonstrates the close relation between renal function and endocrine disturbances, because always during the premenstrual stage and accompanied by the periodic changes in the ovarian function there also occurred changes in the struma and in the function of the thyroid gland. Then the influence on the "renal" symptoms became manifest and the general condition became worse. In the conclusion the author directs attention to the relation between renal function and the sugar metabolism.

Zentralblatt für Chirurgie, Leipzig

57: 1265-1328 (May 24) 1930

Prevention of Kidney Stone Colic by Surgical Intervention Without Removing the Stones. M. Zondek.—p. 1266.
*Undulant Fever (Bang) as a Cause of Bone Lesions (Arthritis; Osteitis). S. Weil.—p. 1269.
*Treatment of Gangrene of Intestine. G. Garry.—p. 1271.
*Treatment of Snapping Thumb. Ottendorf.—p. 1273.
Spontaneous Discharge of Necrotic Tibia of a Fetus Through the Abdominal Wall of the Mother in a Case of Extra-Uterine Pregnancy. F. Schewket.—p. 1273.
In Which Part of Intestine is Tribromethanol Resorbed? L. Treplin.—p. 1275.
Subcutaneous Injury of Duodenum. M. Leibowicz.—p. 1278.
Advances in Surgery of Thyroid and Thymus. P. Meyer-Ruegg.—p. 1283.

Undulant Fever as Cause of Bone Lesions.—Weil relates the case of a man, aged 41, who contracted a *Brucella abortus* infection. He was febrile for three weeks. Three weeks after the fever had ceased, he complained of pain on the dorsum of the right foot. The foot was swollen, discolored and exceedingly painful to pressure. The blood was strongly positive to the agglutination test with *Brucella abortus*. The roentgenogram showed bone atrophy in the metatarsals. One year later every symptom of the trouble had disappeared.

Treatment of Gangrene of Intestine.—Garry urges that in cases of gangrene of the upper segments of the small intestine resection of the diseased part is indicated (because of the dangers of inanition) and that in all other cases exteriorization of the intestine is to be preferred. The mortality with the latter procedure is considerably lower than that of resection. He cites ten cases of incarcerated hernia, all but one of the inguinal type, the exception being of the femoral variety, in which exteriorization of the intestine, with establishment of a colostomy, followed after six or seven days by excision of the diseased segment of intestine and closure of the artificial anus, gave excellent results. Only one of the ten patients died, twelve hours after the first operation. His general condition had previously been very bad.

Treatment of Snapping Thumb.—As a thickening of the tendon sheath is believed to be the cause of snapping thumb, Ottendorf makes an incision, under local anesthesia, over the volar surface of the thumb so as to expose the involved tendon freely, and then incises the tendon sheath lengthwise, making certain that the operation has been successful by having the patient move the thumb in flexion and extension until the snapping sound has ceased. The incision is closed and the wound dressed. The patient is instructed to move the thumb freely to prevent the formation of adhesions. The final result has always been good.

Acta Chirurgica Scandinavica, Stockholm

66: 105-273 (May 30) 1930

*Acute Conditions of the Abdomen: Diagnosis. H. Laurell.—p. 105.
*Exophthalmic Goiter: Surgical Treatment. A. Troell.—p. 133.
*Necrosis of Abdominal Wall Following Laparotomy. J. Hellström.—p. 184.
*Sarcomas of Long Bones: Treatment and Prognosis. I. Behring.—p. 197.
Spontaneous Rupture of Spleen Following Malaria Inoculation. T. M. Beckman.—p. 250.
Giant Cell Tumor of Patella: Case. R. Faltin.—p. 259.
*Cancer: Importance of Sedimentation Reaction. J. Adams-Ray.—p. 263.

Acute Conditions of the Abdomen: Diagnosis.—Laurell calls attention to the great importance of a roentgen examination (with or without an opaque mass) for an earlier and more exact diagnosis of acute abdominal conditions.

Exophthalmic Goiter: Surgical Treatment.—In the routine surgical treatment of 378 persons with exophthalmic goiter, Troell used one stage strumectomy. He states that, even in cases of solitary adenoma and thyrotoxic symptoms, bilateral resection is the most reliable method as it often happens that the para-adenomatous tissue gives a microscopic appearance of exophthalmic goiter. As an anesthetic he prefers 1 per cent procaine hydrochloride solutions to general anesthesia,

1 drop of epinephrine being added for each 10 cc. of the solution. It is only in operations for recurrences that, in consideration of the technical difficulties, he recommends ether anesthesia. The pulse rate and the general condition are affected less by local than by general anesthesia during the operation and the next few days; local anesthesia probably also helps to bring down the operative mortality. In immediate connection with the operation the patient is given a drop enema of 1,000 cc. of a 5 per cent solution of dextrose to which have been added 20 drops of tincture of opium and 30 drops of compound solution of iodine; later in the day 1,000 cc. of a 5 per cent dextrose solution is given subcutaneously. Iodine solution is not generally given after the operation. Since the introduction of compound solution of iodine treatment, strumectomy in several sittings has become almost unnecessary. During the last two years the primary operative mortality has been reduced to 2.2 per cent (during this period only one patient has been refused operation on account of too great a toxicity). The patients have as a rule been allowed to get up at the end of the first week after the operation. Nearly three fourths of the patients operated on for exophthalmic goiter have been discharged after having been confined to the hospital less than a month; patients with adenomatous goiter with hyperthyroidism have been discharged still earlier.

Necrosis of Abdominal Wall Following Laparotomy.—Hellström relates two cases of widespread necrosis of the abdominal wall after laparotomy. The first patient was a man, aged 54, operated on for a gangrenous appendix with abscess. Two weeks after the operation a necrotic inflammation arose in the inner margin of the skin overlying the wound and from here an ulcerative process began to spread, limited peripherally by an undermined necrotic edge, while the area next to the operative wound cleared up and gave evidence of epithelization. Various antiseptics were tried without effect, the ulceration finally involving an area of the size of the palm of a hand. Six weeks after the operation the margins of the wound were excised in healthy tissue by the diathermy knife; this arrested the ulcerative process and the wound cleared up, healing completely after skin-grafting (Thiersch). From the ulceration a culture of a gram-negative bacillus was obtained. The patient did not have diabetes. The Wassermann reaction was negative. The author relates a few similar cases from the literature and discusses the differential diagnosis with regard to other necrotic processes. The second patient was a woman, aged 57, who had undergone an operation for a suspected appendicitis; the operation, however, revealed gallstone ileus. A large gallstone was extracted from a loop of the ileum. The abdomen had been opened by a "gridiron" incision, prolonged downward in the rectus sheath, the inferior epigastric vessels were ligated. On inspection of the wound on the third day a well defined necrosed area of the skin was detected on the medial side of the operative wound, the size of the palm of a hand and having the appearance of a third degree burn. There was no possibility of an etiology of that nature, the cause being probably some circumlatory disturbance that had arisen through the prolonged gridiron incision and the ligation of the epigastric vessels in the absence of the ordinary anastomoses between the inferior and superior epigastric arteries.

Sarcomas of Long Bones: Treatment and Prognosis.—On the basis of a study of 384 cases of sarcoma of the long bones reported in the Swedish literature, Behring states that resection with or without osteoplastic surgery offers only small prospect of cure for sarcomas in the femur, tibia and humerus with a periostal origin and for central sarcoma that have penetrated the osseous capsule and the periosteum, even when extensive excision of the soft parts is made. The late results for resection or extirpation of the fibula in osteogenic sarcoma are relatively favorable, with a nonrecurrence of 33 per cent after at least four years. The late results are also fairly favorable for the cases of osteogenic sarcoma localized to the lower end of the femur and to the tibia and treated by amputation of the femur, with a nonrecurrence of, respectively, 25 and 27.3 per cent. For femoral and humeral sarcoma, with so high a localization or so extensive a dissemination that exarticulation at the hip or interthoracoscapular amputation had to be undertaken, the operative mortality was 10 per cent and the late results bad (4 per cent without recurrence after at least four years). Peripheral sarcoma gives a less favorable prognosis than central. The microscopic examination of the sarcomatous tumors shows a considerably higher percentage of tumors with differentiation of maturer tissue for the nonrecurrent cases than for the patients who died as a result of the tumor (respectively, 85.5 and 43.6 per cent). Where microscopic tumor infiltration into the resected regional lymph nodes has occurred, the prognosis is bad. Exploratory osteotomy renders the prognosis worse. The average postoperative length of life, computed for all patients dying in sarcoma after having undergone operation, is twelve and one-half months.

Cancer: Importance of Sedimentation Reaction.—Adams-Ray noted the sedimentation reaction after one hour in 124 cases of cancer. He states that normal and slightly pathologic values do not exclude cancer. This is especially the case in tumors of the breast. Medium high, high and very high values should awaken a suspicion of the presence of cancer, a suspicion that increases with the rise in the value of the sedimentation reaction. Of cases with organ metastases, no less than 25.7 per cent fell within the group "normal and slightly pathologic values"; 53.3 per cent of the operable cases gave medium high and high values. Eighty-four and four-tenths per cent of the inoperable cases and of the cases with organ metastases showed medium high, high and also very high values; the very high values, however, were obtained only in the inoperable cases (15.8 per cent of these). Among the ventricular carcinomas, there were nine cases with the Weber reaction under 25 mm. (Nilsson's limit of operability), but of these, only four were operable, while two were technically inoperable, and three had organ metastases. The author, consequently, considers that the sedimentation reaction does not give a reliable basis for judging the operability, except in the cases in which it is very high; it then indicates an inoperable tumor.

Hospitalstidende, Copenhagen

73: 515-542 (May 8) 1930

Serologic Reaction to Abortion Bacillus in Certain Occupations. A. Thomsen.—p. 515.
*Earliest Changes in Blood During Liver Treatment of Pernicious Anemia. S. A. Holbøll.—p. 531.
Fibroma of Nose and Throat: Fifteen Cases. K. Barmwater.—p. 537.

Earliest Changes in Blood During Liver Treatment of Pernicious Anemia.—Holbøll made daily examinations of the blood in eleven patients with pernicious anemia during liver treatment and found that the earliest and most characteristic change was in the increased number of reticulocytes. The reticulocyte reaction was characterized by the reticulocyte maximum and the duration of the reaction, the maximum reaction depending among other things on the erythrocyte count at the start and the duration varying from nine to eighteen days. Investigation of the reticulocyte reaction in liver treatment of anemic conditions may be of differential diagnostic value.

73: 543-570 (May 15) 1930

*Occult Hemorrhage in Carcinoma of Large and of Small Intestine. E. Dahl-Iversen and N. I. Nissen.—p. 543.

Occult Hemorrhage in Carcinoma of Large and of Small Intestine Based on Material from Surgical Divisions of Copenhagen Hospitals.—Dahl-Iversen and Nissen present 110 cases, each with at least three benzidine reactions according to Gregersen. There was persistent bleeding in 74 cases (67 per cent), intermittent in 28 (25.5 per cent), and no bleeding in 8 (7.3 per cent). Of the 110 cases, 91 are seen to have been in an advanced or terminal stage.

Hygiea, Stockholm

92: 369-416 (May 15) 1930

*Tuberculosis of Larynx: Treatment. H. Björkman.—p. 376.
"Insulin Anaphylaxis": Case. S. Eckerström.—p. 402.

Tuberculosis of Larynx: Treatment.—Of Björkman's fifty patients treated, together with general hygiene, with general actinotherapy, galvanocautery, and intralaryngeal excisions, usually only with light treatment and galvanocautery, 34 per cent were cured, 16 per cent greatly improved, 18 per cent improved, and 32 per cent not improved. Of the thirty-four patients cured or improved, five had recurrences.